

2.6 National Development Plan

2.6.1 Economic Assessment on the Sixth Five Year Plan

According to the Seventh Five Year Development Plan, in the Sixth Plan period, the average annual GNP growth rate has reached 6%, albeit, in an unstable manner. In this period, high public deficits and the expansion in domestic demand backed up by an inflow of short-term capital formed a driving force for growth. As a result of the considerable reduction in domestic demand in line with the stability measures introduced by the implementation plan, the GNP at fixed prices decreased by 6% in 1994. Thus, in the Sixth Plan period, fixed GNP grew an average of 3.5% annually.

In the Sixth Plan period, 1,348 trillion TL worth of public fixed capital investments at 1994 prices were materialized whereas the target was 1,176 trillion TL. In this period, public sector focused on investments in social and economic infrastructure instead of manufacturing industry, and priority was given to education and health sectors. The share of manufacturing industry which was about 8.9% within the public fixed capital investments in the Fifth Plan period has dropped to 4.7% in the Sixth Plan period. On the other hand, the share of physical and social infrastructure investments within total public investments has risen to 89.3% in line with the objectives to provide economic growth, to eliminate disparities concerning regional development, to increase international competitiveness, to protect the environment and to raise the standard of living in general.

In this period, transportation and communication sector led with a 38% share within the public fixed capital investments which was followed by energy sector with a share of 17.4%, other public services with 12.7% and agricultural sector with 9.4%.

In the period of 1990-1993, foreign capital inflow has been US\$ 3,408 million. However, shares of Turkey in the total foreign capital investments in the world and in the foreign capital invested in developing countries have been limited to 0.4% and 2.5% respectively. In 1994, foreign capital inflow amounted to US\$ 637 million.

Arrangements regarding the liberalization of financial markets and development of financial instruments have contributed to an increase in private sector savings. In this period, private sector savings have risen by an average of 13.3% and their share in the GNP reached 24.5%.

Owing to increases in the use of agricultural lands for non-agricultural purposes and soil erosion, total cultivable area has decreased.

Prior to the customs union to be realized with the EU, some industrial sectors may face difficulties in terms of competing with foreign products.

In conclusion, developments in the Sixth Plan period have made it plain that the consumption based growth, backed up by public sector deficits and short-term capital inflow, is not sustainable. They have highlighted the need for implementing monetary and fiscal policies in harmony with each other so as to ensure economic balances.

2.6.2 The Seventh Five Year Plan

(1) Basic objectives and principles

The Seventh Five Year Plan which is intended to guide Turkey into the 21st century will embrace the spirit of the age and make the best of the advantages of globalization, helping Turkey to take her place among the developed countries of the world. To this end, efforts shall be made to ensure a free and democratic environment, render prominence to individuals, realize a sustainable rapid development, raise the standards of living and improve income distribution, increase productive employment, accelerate industrialization, leap forward in technology and to provide education to all the individuals of the society commensurate with their abilities, assure cultural development, provide social security and basic health services for all and improve the quality of the health services, and protect and improve the environment.

The customs union to be realized with the EU while generating new opportunities in favor of Turkey, bring about new responsibilities as well. In order to benefit from the expected advantages of the customs union, all the agencies and legal framework will be reviewed and restructured. Reforms will be realized to fortify the competitive environment.

Domestic and foreign investments should rapidly be increased with a view to closing the income and productivity gap between Turkey and the EU countries. To create an economic and social environment conducive to this purpose, quality of manpower shall be raised and science and technology will be given greater emphasis in the economic and social structure.

This plan shall specify the general principles and priorities of the implementation of medium and long-term economic, social and cultural policies, anticipate the likely route of economic development within the framework of market mechanism, and provide the general framework to help the decision-making processes of economic agencies.

(2) Objectives of industrialization approach

The development of industry will be ensured by setting up a proper macroeconomic environment. Industrial output is expected to rise by an annual average rate of 6.0-7.8 %.

As far as industrialization is concerned, the basic aims are to improve productivity, quality and standardization; to build a flexible production system and utilize modern technologies; the integration of small and large industries, and to take on a production structure with a higher value added.

Structural problems will be solved systematically. Special attention will be attached to those sectors having troubles concerning competitiveness. And, privatization will be speeded up.

Support will be provided to R&D studies, engineering and consultancy with a

view to improving competitiveness of the industry, especially of those industries using advanced technology; in addition, special importance will be placed upon improving R&D activities in cooperation with universities and industry.

Small and medium size enterprises will be guided towards producing goods and services that are demanded in foreign markets, and support will be provided for enterprises active in the same fields to form multi-partnered export companies.

Efforts will be made, to make the TS-ISO 9000 Quality System, comprising training and consulting services, common under not only the big enterprises, but also well-known for the medium size establishments.

(3) Objectives on transportation sector

The main objective is the establishment of an environmentally compatible transportation infrastructure, in order to provide the largest possible contribution to achieving development objectives through economic, rapid and safe service by creating a harmonious integration among transport modes.

Modern methods of railway operation, following the demands of the clients closely and capable of adapting to the changing market conditions, shall be implemented in order to take the necessary share from the upturn of demand in railway transportation.

A dynamic shipping policy that can adapt to changing trends in the world shipping sector will be established. Within the Seventh Plan period, the merchant maritime fleet is anticipated to reach 13.0 million DWT including renewals. The share obtained from world maritime transportation shall definitely be raised to high levels.

Port management shall adopt modern practices and be coordinated with developments in national and international trade. Port capacities shall be at the utmost level.

In parallel with the increase in container traffic, investment for new container terminals, starting with the Derince and Iskenderun terminals, shall be materialized. At the end of the period, container traffic at Turkish ports is expected to exceed 1 million units.

TABLE 2.6.1 Development of Passenger Transport

Sub Sector	1994 Realization Estimate	1995 Estimate	2000 Estimate	Annual average increase(%) Sixth Plan period	Annual average increase(%) Seventh Plan period
Domestic					
Highway	127948	138000	199000	5.4	7.6
Railway	3881	4000	5100	1.2	5.0
Maritime	50	60	60	-21.4	0.0
Airline	2278	2536	4235	15.9	10.8
Total	134157	144596	208395	5.4	7.6
International					
Maritime	190	210	300	24.3	7.4
Airline	6855	7747	13238	11.6	11.3
Total	7045	7957	13538	11.9	11.2

Source: Seventh Five Year Development Plan (1996-2000)

TABLE 2.6.2 Development of Freight Transport

Sub Sector	1994 Realization Estimate	1995 Estimate	2000 Estimate	Annual average increase(%) Sixth Plan period	Annual average increase(%) Seventh Plan period
Domestic					
Highway	86382	92000	121400	8.3	5.7
Railway	8050	8800	14750	4.2	10.9
Maritime	595	1000	1200	-39.2	3.7
Airline	14	16	26	9.2	10.2
Pipeline(oil)	3170	3225	9800	-20.3	24.9
Total	98211	105041	147176	3.8	7.0
International					
Railway	183	300	550	-29.2	12.9
Maritime	439100	450000	900000	6.3	14.9
Airline	218	250	432	22.8	11.6
Pipeline(oil)	0	0	45000	-	-
Total	439501	450550	945982	3.5	16.0

Source: Seventh Five Year Development Plan (1996-2000)

(4) Macroeconomic projections

1) Structure of Gross Domestic Product

In the plan period, it is estimated that the annual average growth rate of value added by the main sectors will be 2.9-3.7% in agricultural sector, 6.0-7.7% in industrial sector and 5.1-6.8% in services sector. Thus, at the end of the plan period, it is expected that the share of the agricultural sector in GDP will fall from 15% to 12%; by contrast, the share of the industrial sector will rise from 25.8% to 27% while the services sector will remain at about 59%.

2) Structure of production

In the plan period, the production by sectors in constant prices is expected to

increase by 2.9-3.7% in the agricultural sector, by 6.0-7.8 in industrial sector and by 4.9-6.8% in services sector, thus, the increase in total production is estimated to be 5.2-6.9%.

It is estimated that the growth in the agricultural sector will depend largely on the increase in domestic demand while the growth in the industrial sector will depend on exports and investments besides consumption. The growth in services sector is expected to result from the increase in domestic demand induced by the growth of the industrial sector and the promising developments in the tourism sector.

As a result of the projected sectoral developments, at the end of the plan period, the percentage share of the agricultural sector will fall to 11% from 112.4% in 1995, while that of the industrial sector will increase from 41.8% to around 43%. The share of services sector will remain fairly constant.

TABLE 2.6.3 Development of Value Added by the Main Sectors

	1995 Value added estimated	1995 Share in GDP (%)	2000 Share in GDP (%)	1995-2000 Average annual change (%)
Agriculture	603.7	15.0	13.5-13.0	2.9- 3.7
Industry	1039.2	25.8	27.0-27.2	6.0- 7.7
Services	2383.2	59.2	59.4-59.8	5.1- 6.8
GDP	4026.2	100.0	100.0-100.0	5.0- 6.6
NFI	14.3	0.4	2.7- 2.5	57.7-57.7
GNP	4040.5	100.4	102.7-1-2.5	5.5- 7.1

Source: Seventh Five Year Development Plan (1996-2000)

TABLE 2.6.4 Development of Value Added by the Main Sectors

	1995 Estimate	1995 Breakdown (%)	1995-2000 Average annual percent change (%)	2000 Breakdown (%)
Agriculture	826.1	12.4	2.9-3.7	11.2- 10.7
Industry	2777.8	41.8	6.0-7.8	43.6- 43.7
Services	3039.1	45.8	4.9-6.8	45.2- 45.6
Total	6643.0	100.0	5.2-6.9	100.0-100.0

Source: Seventh Five Year Development Plan (1996-2000)

3 Economic Situation and Transport Activity in Surrounding Countries of Turkey

3.1 Overview on Long-Term World Economy and Trade

In this study project, it is needed to think following some points for forecasting future cargo handling demand in the Sea of Marmara.

“ The expected role of the Sea of Marmara will be identified in relation with the traffic taking into regard the impact of Rhine-Danube river transportation, EU countries, newly emerged countries of former Soviet Union, and the traffic through the Black Sea.” It stand in need for studying these items to have a worldwide overview concerned with economy, trade and international cargo movement.

Needless to say, international cargo movement is linked to macroeconomics development and trade growth in general.

For example, real world trade (volume, R_WT) is formulated as following function with real world GDP (R_WGDP). World trade elasticity to world GDP is 1.502 in this analysis.

$$\ln (R_WT) = 0.676 + 1.502 * \ln (R_WGDP)$$

(R2 = 0.968, Data: 1973-92)

And, world maritime transport (WMT) is formulated as following function with real world trade and oil share in world trade (OS). Figure 3.1.1 shows actual and estimation obtained from the function.

$$WMT = -1261 + 59.32 * R_WT + 4729 * OS$$

(R2 = 0.987, Data: 1970-79)

$$WMT = - 738 + 29.77 * R_WT + 10318 * OS$$

(R2 = 0.956, Data: 1980-90)

If some scenario were given about R_GDP and OS, future scope of R_WT and WMT would be roughly obtained. However, that scope would not be sufficient. It must be broken down to regional basis. Then, it is needed to introduce world trade matrix analysis. Table 3.1.1 shows a example of world trade matrix in 1980 and 1992.

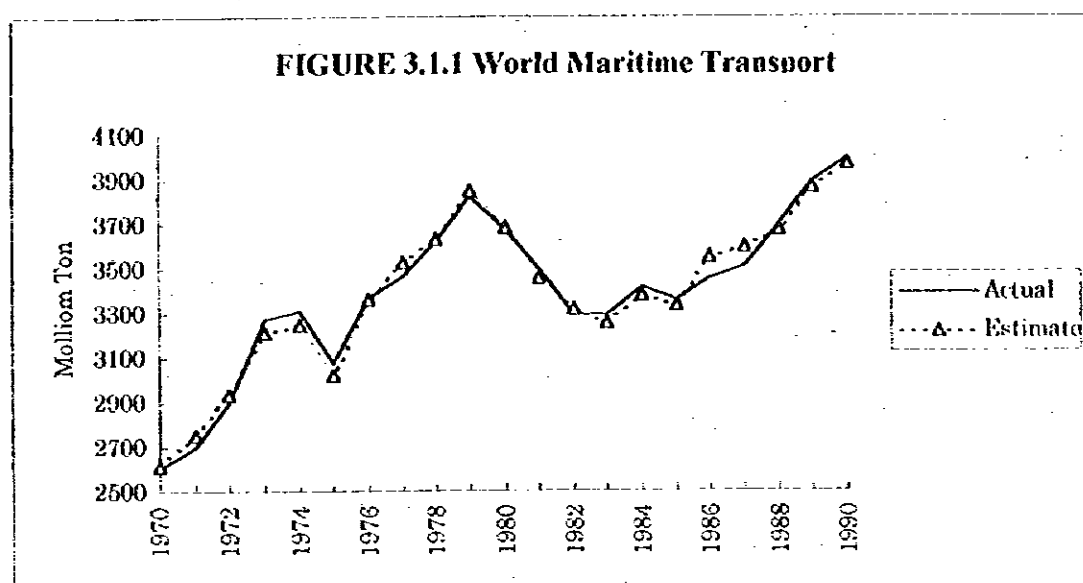


TABLE 3.1.1 World exports by regions

In million U.S. dollars f.o.b.

Export to \ From	Year	World	East Europe	Frm.USSR	West Europe	Africa	America	Middle East	Other Asia	Oceania
World	1980	2000916	82040	61924	875843	98034	417165	96519	298042	27452
	1992	3685964	54118	41540	1663886	97833	813025	133160	766809	52417
East Europe	1980	78666	19499	26937	17075	2977	2821	3619	3013	89
	1992	41195	4400	7553	21825	1133	1650	1730	3228	90
Frm.USSR	*1980	76149	32278		22672	1380	3958	2210	6038	14
	**1992	45612	6001		25101	262	1616	1832	8963	137
West Europe	1980	810842	18310	17170	543164	58249	75783	41987	33587	6662
	1992	1697618	34866	19874	1202892	53952	160821	57180	115038	12761
Africa	1980	94942	1717	733	46251	3280	35792	1801	3461	73
	1992	70120	652	244	42329	5668	14223	1383	3883	78
America	1980	389405	4575	8023	100606	12511	177273	12539	60863	5805
	1992	694917	2456	5082	149887	12987	343090	18693	144854	11603
Middle East	1980	210976	2342	988	82802	3596	34471	11120	68744	2767
	1992	116121	1945	783	28837	2603	16560	16535	45807	1198
Other Asia	1980	291746	3016	6798	48799	13702	79131	21577	107854	8890
	1992	928221	3471	7627	168716	18151	261737	34059	409304	20180
Frm.USSR -Asia	1980									
	1992	4453	377		425	32	158	1803	767	0
Oceania	1980	28857	237	1276	5098	737	4027	1507	11520	2976
	1992	54905	114	86	8209	744	6777	1501	29543	6094

Source: U.N. Yearbook of international trade statistics 1993, N.Y.1995

Note: * data refer to the former USSR ** data refer to the European countries of the former USSR.

Turkish trade vectors (row and column vector) are included in Other Asia in above trade matrix. Then, further work will be needed to disaggregate these data about Turkey and some surrounding countries. However, at this stage of study, some facts should be pointed out in the relations with Turkish trade.

- (1) Total world trade (nominal f.o.b.value basis) increased by 84.2% over 1980-92. Its average annual growth rate was 5.2%, not so high.
- (2) The mutual trades of western European countries took 27.1% in total world trade in 1980, and expanded to 32.6% in 1992.
- (3) World trade share of Other Asia (excluding Middle East of Asia) enlarged over 1980-92. Export share expanded from 14.6% to 25.1% and Import from 14.9% to 20.8%.
- (4) On the other hand, the position of Eastern European and Former Soviet Union countries in world trade was reduced. In the case of Eastern Europe, its Export of US\$ 78.7 billion in 1980 decreased to US\$ 44.2 billion in 1992.

3.2 Economy and Trade of European Union

As mentioned in "Chapter 2.3 Foreign Trade (of Turkey)", it is very important to study about European Union, especially its long-term trends of economy and trade.

Table 3.2.1 shows long-term GDP trends of each countries of EU at the price level and exchange rates of 1990. The average annual growth rate of total EU fifteen countries was 2.0% over 1980-94, and 2.4% over 1970-94. In almost of countries, growth rates over 1980-94 were lower than the ones over 1970-94.

Table 3.2.2 shows long-term trade trends of EU countries. In 1992, Import (c.i.f.) and Export (f.o.b.) of total EU registered US\$ 1,811 billion and 1,579 billion respectively. The average annual growth rates were 5.4% in Import and 6.1% in Export over 1980-94. These rates were considerably lower than ones over 1970-92. However, the reduction of growth rates were mainly made by the stability of tradable goods prices. According to the National Accounts published by OECD, growth rates of real basis (at the price level and exchange rates of 1990) are following.

Import (including services)	3.9% (1980-94)	4.3% (1970-94)
Export (including services)	4.1% (1980-94)	4.6% (1970-94)

TABLE 3.2.1 GDP of EU15 at the price levels and exchange rates of 1990

billion of US\$, %																
	EU15	AUSTRI	BELGIU	DENMA	FINLAN	FRANC	GERMA	GREECE	IRELAN	ITALY	LUXEM	NETHER	PORTU	SPAIN	SWEDE	UNITED KINGDOM
		A	M	ARK	D	E	NY		D		BOURG	LANDS	GAL		N	
1970	3979.58	89.58	115.68	84.67	70.71	695.56	1010.26	44.36	20.08	607.67	5.64	171.41	31.58	258.61	162.43	618.61
1971	4105.81	94.16	119.93	86.93	72.19	728.65	1041.15	47.51	20.78	617.43	5.79	178.65	33.67	270.64	169.05	631.72
1972	4281.27	100.01	126.26	91.51	77.70	758.36	1085.41	51.73	22.13	634.09	6.17	184.56	36.37	292.69	174.46	654.07
1973	4531.27	104.89	133.72	94.84	82.91	799.46	1137.14	55.52	23.17	679.17	6.69	193.21	40.44	315.49	179.78	698.05
1974	4624.24	109.03	139.19	93.95	85.42	821.17	1139.35	53.50	24.16	716.04	6.97	200.88	40.91	333.22	182.39	688.57
1975	4593.79	108.64	137.12	93.33	86.40	818.49	1125.10	56.74	25.53	697.05	6.51	200.69	39.13	335.02	169.11	687.77
1976	4799.33	113.61	144.77	99.38	86.04	854.51	1184.99	60.35	25.88	742.91	6.68	210.97	41.83	346.09	166.74	703.21
1977	4929.76	118.77	145.45	100.99	86.25	884.71	1218.71	62.41	28.01	767.98	6.78	215.86	44.17	355.92	170.79	718.46
1978	5078.51	118.84	149.43	102.48	88.05	914.63	1255.23	66.59	30.02	796.26	7.06	220.95	45.41	361.12	178.37	744.07
1979	5266.37	124.47	152.62	106.11	94.18	943.65	1308.26	69.05	30.94	843.93	7.22	225.87	47.98	361.27	185.22	764.59
1980	5344.21	128.10	159.20	105.64	99.20	956.75	1321.09	70.26	31.90	879.69	7.28	228.59	50.18	365.97	188.31	752.05
1981	5356.26	127.73	157.69	104.70	101.05	968.17	1327.59	70.30	32.96	884.54	7.24	227.43	50.99	365.33	188.28	742.25
1982	5401.83	129.10	160.08	107.86	104.33	990.43	1320.16	70.58	33.71	886.43	7.33	224.79	52.08	371.05	190.17	753.74
1983	5496.69	131.67	160.83	110.58	107.15	998.26	1347.25	70.86	33.63	895.01	7.54	228.63	51.99	379.28	193.50	780.50
1984	5633.16	133.46	164.35	115.43	110.38	1013.07	1388.14	72.81	35.09	919.05	8.01	236.15	51.01	384.85	201.34	800.01
1985	5775.91	136.75	165.72	120.38	114.10	1031.45	1420.83	75.08	36.17	942.95	8.24	243.42	52.44	394.90	205.22	828.24
1986	5939.22	138.37	167.98	124.77	116.81	1056.30	1456.66	76.30	36.02	970.50	8.64	250.12	54.61	407.54	209.93	864.67
1987	6106.84	140.66	171.33	125.14	121.59	1079.23	1481.22	75.95	37.70	1000.93	8.89	253.66	57.64	430.53	216.53	905.84
1988	6356.70	146.37	179.72	126.59	127.56	1125.11	1535.30	79.33	39.31	1041.62	9.40	260.29	60.98	452.75	221.41	950.97
1989	6572.00	151.97	185.77	127.31	134.79	1167.44	1588.71	82.53	41.71	1072.24	10.03	272.47	64.48	474.20	226.67	971.69
1990	6730.26	158.43	192.00	129.13	134.81	1195.43	1640.06	81.84	44.97	1095.12	10.35	283.67	67.24	491.94	229.76	975.51
1991	6801.64	162.93	196.26	130.86	125.28	1204.76	1686.65	84.70	45.97	1108.27	10.66	290.11	68.68	503.10	227.19	956.23
1992	6870.70	166.25	199.85	131.94	120.83	1221.02	1723.77	85.04	47.78	1116.37	10.86	295.99	69.43	506.46	223.96	951.14
1993	6827.83	166.86	196.60	133.91	119.41	1203.11	1703.79	84.26	49.26	1103.22	10.86	296.69	68.63	500.56	218.21	972.44
1994	7018.82	171.94	200.96	139.85	124.25	1235.42	1752.55	85.49	52.57	1127.23	11.22	304.61	69.15	511.10	222.95	1009.53
Average annual growth rate of GDP																
1980-94	2.0	2.1	1.7	2.0	1.6	1.8	2.0	1.4	3.6	1.8	3.1	2.1	2.3	2.4	1.2	2.1
1970-94	2.4	2.8	2.3	2.1	2.4	2.4	2.3	2.8	4.1	2.6	2.9	2.4	3.3	2.9	1.3	2.1
Share of total EU15 GDP																
1994	100.0	2.4	2.9	2.0	1.8	17.6	25.0	1.2	0.7	16.1	0.2	4.3	1.0	7.3	3.2	14.4

(Source) OECD, National Accounts, Volume I, 1996

TABLE 3.2.2 International Trade (nominal base) of OECD-Europe

Billion US\$, %

	EU15	AUSTRIA	BELGIUM	DENMARK	FINLAND	FRANCE	GERMANY	GREECE	IRELAND	ITALY	NETHERLANDS	PORTUGAL	SPAIN	SWEDEN	UNITED KINGDOM
		-LUX		ARK	D		Y		D		ANDS	GAL		N	
IMPORT(C.I.F)															
1970	162.98	23.54	11.41	4.39	2.64	19.11	34.79	1.96	1.57	14.97	13.43	1.58	4.72	7.01	21.87
1975	421.10	58.38	30.79	10.37	7.63	53.99	86.23	5.32	3.78	38.54	34.84	3.84	16.23	17.86	53.31
1980	968.10	127.80	71.86	19.35	15.64	134.90	207.08	10.55	11.15	100.75	76.62	9.31	34.08	33.44	115.56
1985	836.86	109.96	56.21	18.07	13.23	108.38	181.98	10.14	10.02	87.72	65.38	7.66	29.97	28.55	109.59
1986	993.75	137.36	68.73	22.82	15.33	129.44	218.27	11.35	11.56	99.40	75.69	9.65	35.09	32.70	126.37
1987	1232.73	187.15	83.55	25.43	18.92	158.50	256.99	13.16	13.64	125.69	91.50	13.97	49.12	40.71	154.41
1988	1363.13	185.46	92.45	25.94	21.84	177.29	280.09	12.32	15.57	138.58	99.52	17.94	60.53	45.86	189.72
1989	1477.30	195.97	98.60	26.73	24.61	190.96	310.87	16.15	17.42	153.01	104.47	19.21	70.96	49.13	199.22
1990	1740.11	229.54	120.33	31.74	27.01	253.21	356.84	19.78	20.68	181.98	126.20	25.36	87.72	54.86	224.86
1991	1743.52	216.36	121.06	32.41	21.72	230.83	389.21	21.58	20.76	182.75	127.25	26.41	93.33	50.00	209.86
1992	1811.30	214.15	125.15	33.76	20.75	238.88	408.31	23.23	22.48	188.52	134.41	30.35	99.77	49.91	221.64
1993		191.33	0.00	30.45	18.07	200.79	329.70	0.00	21.05	0.00	121.57	24.32	81.88	42.69	206.32
EXPORT(F.O.B)															
1970	133.02	2.86	11.60	3.29	2.31	17.94	38.81	0.64	1.04	13.21	11.77	0.95	2.39	6.79	19.43
1975	349.01	7.52	28.80	8.71	5.50	52.23	100.26	2.29	3.19	35.00	35.10	1.94	7.67	17.38	43.42
1980	771.34	17.49	64.65	16.73	14.15	116.04	210.24	5.15	8.40	78.11	73.95	4.64	20.72	30.91	110.15
1985	734.45	17.25	53.76	16.94	13.62	101.71	209.30	4.54	10.36	76.74	68.42	5.68	24.25	30.47	101.41
1986	900.23	22.53	68.96	21.21	16.34	124.86	271.03	5.85	12.59	97.63	80.51	7.24	27.23	37.27	106.98
1987	1079.23	27.18	83.31	25.60	19.56	148.40	323.92	6.53	16.00	116.41	93.10	9.32	34.20	44.51	131.21
1988	1197.13	31.06	92.15	27.66	22.15	167.81	353.95	5.43	18.75	127.89	103.59	10.99	40.34	49.89	145.48
1989	1274.16	32.49	100.10	28.11	23.27	173.07	378.80	7.54	20.69	140.62	108.29	12.80	43.46	51.61	153.30
1990	1502.39	41.14	118.33	35.14	26.65	210.17	422.04	8.11	23.75	170.39	131.78	16.42	55.65	57.51	185.33
1991	1488.07	41.13	118.36	36.01	23.10	213.44	402.85	8.68	24.22	169.54	133.68	16.33	60.20	55.23	185.31
1992	1578.61	44.38	123.56	39.65	23.53	231.91	430.27	9.51	28.34	178.17	139.97	18.30	64.34	56.15	190.54
1993		40.20	0.00	36.71	23.50	206.26	365.30	0.00	28.35	0.00	131.16	15.40	62.87	49.86	181.56
Average annual growth rate															
IMPORT															
1980-92	5.4	4.4	4.7	4.7	2.4	4.9	5.8	6.8	6.0	5.4	4.8	10.3	9.4	3.4	5.6
1970-92	11.6	10.6	11.5	9.7	9.8	12.2	11.8	11.9	12.9	12.2	11.0	14.4	14.9	9.3	11.1
EXPORT															
1980-92	6.1	8.1	5.5	7.5	4.3	5.9	6.1	5.2	10.7	7.1	5.5	12.1	9.9	5.1	4.7
1970-92	11.9	13.3	11.4	12.0	11.1	12.3	11.6	13.0	16.2	12.6	11.9	14.4	16.2	10.1	10.9

(Source) UN, Yearbook of International Trade Statistics 1993

3.3 Economy and Trade of Black Sea Countries

In addition to the EU's economy, there is more importance to study of ones of Black Sea Countries. The latter may have more influences directly to our study area.

The countries of Eastern Europe and the former Soviet Union are now on the way to transit to market economy. Their transition processes started in 1990 are becoming to have some effects. The rate of confusion is clearly watched in the Table 3.3.1 showing the inflation in Eastern Europe, Baltics and CIS. For example, in 1993, price rose by more than ten thousand percent for previous year in Armenia and Ukraine. However, these inflation is going toward a course to slow down generally, except some countries.

TABLE 3.3.1 Inflation in Eastern Europe, the Baltics and the CIS

	%					
	1991	1992	1993	1994	1995 estim.	1996 proj.
Albania	104	237	31	16	6	6
Bulgaria	339	79	64	122	33	30
Croatia	149	937	1150	-3	4	5
Czech Rep.	52	13	18	10	8	7
FYR Macedonia	115	1935	230	55	9	6
Hungary	32	22	21	21	28	22
Poland	60	44	38	29	22	19
Romania	223	199	296	62	28	20
Slovak Rep.	58	9	25	12	7	7
Slovenia	247	93	23	18	9	6
Estonia	304	954	36	42	29	22
Latvia	262	958	35	26	23	20
Lithuania	345	1175	189	45	36	30
Armenia	25	1341	10996	1885	25	20
Azerbaijan	126	1395	1294	1788	86	30
Belarus	93	1558	1994	1957	340	80
Georgia	131	1176	7488	3279	25	20
Kazakhstan	150	2567	2169	1160	60	30
Kyrgyzstan	170	1771	1366	87	32	25
Moldova	151	2198	837	116	24	16
Russia	144	2318	841	203	131	45
Tajikistan	204	1364	7344	5	1350	500
Turkmenistan	155	644	9750	1100	2500	500
Ukraine	161	2000	10155	401	180	60
Uzbekistan	169	910	885	1281	115	40

Source: EBRD, Transition report update, April 1996

Table 3.3.2, which is quoted from "Transition report update" (European Bank for Reconstruction and Development), shows real GDP trends of these countries after 1990. The values in 1995 and 1996 are ones of estimation and forecast made by EBRD. Three general points are pointed out apart from each countries performance.

(1) In Eastern Europe and Baltics, it seems that year of 1993 was a bottom of economic decline and their real GDP is beginning to grow again. And its growth rates of this few years are in the level of 4 or 5% annually.

TABLE 3.3.2 Real GDP in East Europe, the Baltics and the CIS

	Real GDP Growth (%)							Note 1	Note 2
	1990	1991	1992	1993	1994	1995	1996	1989=100	(mil.\$)
						Estm.	Proj.		
Albania	-10	-28	-10	11	7	6	5	74	
Bulgaria	-9	-12	-7	-2	1	3	3	75	30728
Croatia	-9	-14	-9	-3	1	2	5	71	
Czech Republic	0	-14	-6	-1	3	5	6	86	
FYR Macedonia	-10	-12	-21	-8	-4	-4	3	53	
Hungary	-4	-12	-3	-1	3	2	2	86	26034
Poland	-12	-7	3	4	6	7	6	99	66750
Romania	-6	-13	-9	1	4	7	4	84	35500
Slovak Rep.	0	-16	-6	-4	5	7	6	85	
Slovenia	-5	-8	-5	1	6	5	5	93	
Estonia	-8	-11	-14	-7	-3	4	6	66	6401
Latvia	3	-8	-35	-15	2	1	1	54	9585
Lithuania	-5	-13	-38	-24	2	3	3	41	10349
Armenia	-7	-11	-52	-16	5	7	7	38	6471
Azerbaijan	-12	-1	-23	-23	-21	-17	-7	34	8272
Belarus	-3	-1	-10	-12	-20	-12	-5	54	27219
Georgia	-12	-14	-40	-39	-35	-5	5	17	11287
Kazakstan	0	-13	-13	-12	-25	-9	1	45	30056
Kyrgistan	3	-6	-26	-16	-27	-6	1	42	4385
Moldova	-2	-18	-29	-1	-31	2	2	40	8073
Russia	-4	-13	-15	-9	-13	-4	3	55	496081
Tjikistan	-2	-7	-29	-11	-21	-12	-8	40	3708
Turkmenistan	2	-5	-5	-10	-20	-5	0	63	4775
Ukraine	-3	-12	-17	-17	-23	-12	-2	40	111714
Uzbekistan	2	-1	-11	-2	-4	-2	-3	83	16447
Eastern Europe, the Baltics and the CIS									
	-5	-12	-10	-6	-7	-1	3	66	
Eastern Europe and the Baltics									
	-7	-11	-4	0	4	5	5	87	
CISs									
	-4	-12	-15	-10	-14	-5	2	53	

Source: EBRD, Transition report update, April 1996

WB, Economic Data Book, 1995

(Note1) Estimated level of GDP in 1995

(Note2) GDP in constant 1987 US\$ in 1989

(2) On the other hand, the real total GDP of CIS countries continued to decline until 1995. If the EDRB projection in 1996 would be realized and its trend would become certain, the year of 1996 became a turning point for the CIS economy. However, there are some countries remained in the situation of negative growth, Azerbaijan, Tjikiatan and Ukraine.

(3) The column before the last indicates the estimated level of real GDP in 1995 compared with 1989 (=100). As mentioned above, these countries are becoming to realize some kind of success in their transition. But it is only in a initial stage, especially in CIS. The projected GDP level in 1996 remains still 53% of 1989 in CIS and 87% in Eastern Europe.

The volume of trade will be expected to increase with the recovery of economic performance. Table 3.3.3. shows the situation of international trade of the countries surrounding the Black Sea. Generally speaking, it seems that the international trade of these countries are going toward stabilized situation after 1993 except some countries. However, the level of trade is far from the one before 1990. For example, Export and Import of Ukrine was US\$ 74.6 billion and 87.3 billion in 1990. And they are now only US\$ 12.4 billion and 14.3 billion respectively.

3.4 International Maritime Transport

3.4.1 Overview on maritime Transport

At first, it will be needed to grasp the total volume of maritime transport roughly. Table 3.4.1 is a result of analysis made by United Nations. It shows cargo volume loaded and unloaded by world regions. Original data of UN indicate by each country basis. According this data, 4.0 billion tons of cargo were loaded at the all over the world in 1990. Paying attention to the Western Asia (Turkey is included in this classification), its cargo volume loaded was 527 million tons and 156 million tons unloaded. Their world share are 13.2% and 3.8% respectively.

TABLE 3.3.3 International Trade of the countries surrounding the Black Sea

		Million US\$, %								
		1989	1990	1991	1992	1993	1994	1995	1996	
								estim.	proj.	
Bulgaria	Exports(data from the balance of payments)	n.a.	2500	2700	4000	3700	4200	4800	n.a.	
	Imports(data from the balance of payments)	n.a.	3100	2300	4200	4600	4000	4400	n.a.	
	*Exports(data from the balance of payments)	-7.9	-44.0	-1.7	21.1	13.9	26.0	22.2	n.a.	
Romania	*Imports(data from the balance of payments)	17.3	49.9	-10.2	11.3	10.7	9.1	33.3	n.a.	
	Exports(merchandise)	n.a.	n.a.	395	1275	716	682	485	n.a.	
	to countries outside the FSU	n.a.	n.a.	24	755	347	401	n.a.	n.a.	
Azerbaijan	to former Soviet Republics	n.a.	n.a.	371	520	369	281	n.a.	n.a.	
	Imports(merchandise)	n.a.	n.a.	336	786	721	791	710	n.a.	
	from countries outside th FSU	n.a.	n.a.	67	384	238	293	n.a.	n.a.	
Georgia	from former Soviet Republics	n.a.	n.a.	269	402	483	498	n.a.	n.a.	
	Exports	n.a.	n.a.	n.a.	267	457	381	356	n.a.	
	Imports	n.a.	n.a.	n.a.	645	905	744	683	n.a.	
Moldova	Exports(merchandise)	n.a.	n.a.	n.a.	868	451	500	672	n.a.	
	to countries outside the FSU	n.a.	n.a.	n.a.	185	174	200	260	n.a.	
	to former Soviet Republics	n.a.	n.a.	n.a.	683	277	300	412	n.a.	
Russian Fed.	Imports(merchandise)	n.a.	n.a.	n.a.	905	631	600	693	n.a.	
	from countries outside th FSU	n.a.	n.a.	n.a.	205	210	240	254	n.a.	
	from former Soviet Republics	n.a.	n.a.	n.a.	700	421	360	440	n.a.	
Ukraine	*Exports to non-CIS countries(incl.gold)	0.7	-4.8	-28.4	-16.8	4.5	16.1	25.0	7	
	*Import from non-CIS countries	8.0	4.8	-45.6	-16.9	-11.3	12.7	12.5	20	
	Exports	77100	74600	50000	11300	12800	11800	12400	n.a.	
Ukraine	to countries outside the FSU	14000	13200	7300	6000	5200	4600	5300	n.a.	
	to former Soviet Republics	63100	61400	42700	5300	7600	7200	7100	n.a.	
	Imports	86100	87300	53400	11900	15300	14200	14300	n.a.	
Ukraine	from countries outside th FSU	14800	15800	10000	5500	4700	4300	4700	n.a.	
	from former Soviet Republics	71300	71500	43400	6400	10600	9800	9600	n.a.	

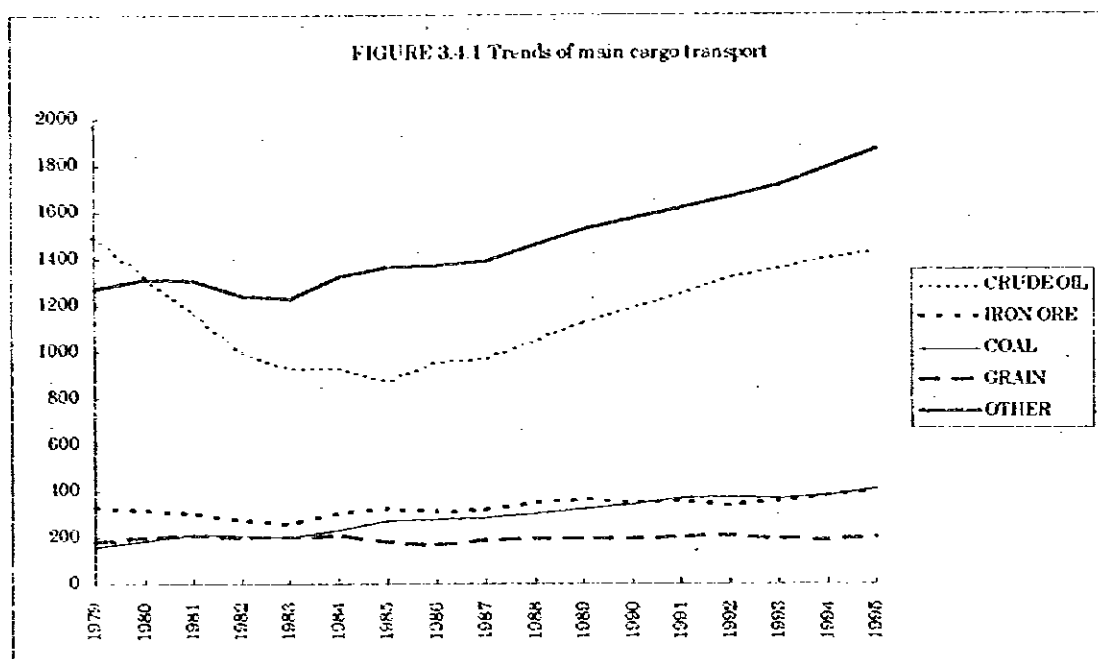
(Source) EBRD: Transition report update, April 1996

(Note) *Exports & *Imports: changing rate for previous year

TABLE 3.4.1 Analysis of goods loaded and unloaded in international maritime transport

	million tones										
country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
LOADED											
World	3676	3503	3290	3291	3410	3362	3459	3505	3700	3889	3995
Africa	459	435	424	429	402	436	452	451	479	502	524
of which	215	220	225	233	201	214	221	220	228	237	247
North											
of which East	8	11	9	8	7	7	7	7	8	8	9
North America	712	709	661	625	640	589	577	619	653	685	685
South America	282	300	280	287	309	310	319	318	331	350	374
Asia	1283	1140	997	981	1011	943	997	1006	1106	1177	1222
of which West	831	700	502	449	459	398	428	415	335	513	627
Europe	584	590	585	618	667	687	705	702	702	735	755
of which East	50	34	43	51	62	61	66	63	62	59	48
of which	103	111	100	112	116	116	118	110	123	130	136
South											
Oceania	205	193	191	185	213	242	253	251	264	276	284
USSR	150	137	151	166	166	154	156	157	161	163	149
UNLOADED											
World	3711	3558	3357	3283	3435	3427	3533	3628	3859	4018	4102
Africa	184	210	232	227	205	196	194	193	205	212	217
of which	102	152	151	151	126	119	119	118	122	126	129
North											
of which East	20	18	17	16	15	16	16	18	20	21	21
North America	704	643	529	500	539	500	556	571	604	657	683
South America	120	110	101	93	94	90	89	91	100	106	99
Asia	1122	1088	1094	1153	1223	1231	1267	1330	1416	1490	1526
of which West	110	111	126	142	148	141	151	152	161	147	156
Europe	1484	1358	1292	1210	1262	1295	1315	1323	1411	1427	1453
of which East	104	95	79	81	84	85	87	170	174	174	176
of which	403	378	357	346	343	348	351	341	370	379	389
South											
Oceania	42	46	40	35	36	37	32	32	37	39	39
USSR	56	72	70	64	76	77	80	84	86	88	85

(Source) 1980-1981: UN; *International Statistics Yearbook 1983-84*
 1982-1985: UN; *International Statistics Yearbook 1985-86*
 1986- : UN; *Yearbook of International Trade Statistics 1989*
 1987-1990: UN; *Yearbook of International Trade Statistics 1991*



(Source) Fearnly, Review 1995

Figure 3.4.1 shows the trends of main cargo transport. As seen in this figure, coal, grain and iron ore which are the main bulk cargo in the world do not increase so much over 1979-95. On the other hand, crude oil, which decreased during the first half of 1980, are expanding again. And the category "Other" continues to grow strongly. The expansion of the "Other" supports the containerization over the world today. The shares of each categories in total transport in 1995 are following.

Crude Oil	30.5%
Oil Products	8.1%
Iron Ore	8.6%
Coal	8.7%
Grain	4.2%
Other	39.9%

3.4.2 Crude Oil Trade Flow of the World

According to World Bulk Trades 1995 published by Fearnleys, Crude Oil Trade Flow is shown as following in Table 3.4.2. The remarkable flows are from Middle East and Near East to N/W (north & west) Europe and Mediterranean.

If it is possible to assume that the flow from both regions is passing through the Mediterranean Sea, 182.2 million tons of crude oil concerns with the area of Mediterranean.

Moreover, there is another 20 million tons flow from Black Sea to Western Europe (included in "Others" in the Table).

TABLE 3.4.2 Crude Oil Trade flow in 1994

Million tonnes							
to-> from:	N/W Europe	Mediterranean	North America	South America	Japan	Others	TOTAL
Middle East	98.1	66.1	97.5	33.0	175.4	244.5	714.6
Near East	7.8	10.2	2.0	0.1	0.3	-	20.4
North Africa	18.1	60.5	7.2	5.0	0.2	10.0	101.0
West Africa	19.1	31.9	71.9	11.7	0.8	5.5	140.9
Caribbean	9.3	9.6	132.3	13.1	4.6	8.0	176.9
South East Asia	0.1	-	12.8	-	43.5	20	76.4
Others	41.8	39.6	58.3	15.1	2.0	16.1	172.9
TOTAL	194.3	217.9	382.0	78.0	226.8	304.1	1403.0

(Source) Fearnleys, *World Bulk Trades 1995*

3.4.3 Dry Bulk Flow of the World

Next, Table 3.4.3 shows Total Dry Bulk Flow in 1994. In the table, the dry bulk from Mediterranean area is 4.65 million tons in 1994 totally, and they are distributed to Asia (1.93 million tons), UK and Continental (1.35 million tons), Mediterranean itself (0.62 million tons) and so on.

And the total flow to Mediterranean is 57.0 million tons. Their origins are mainly from North America (15.6 million tons), South America (16.6 million tons), Africa (10.9 million tons) and so on.

In addition, the dry bulk to Other Europe are flowing in the Sea of Mediterranean, and partly in the Black Sea. Similarly, it seems that the considerable volume of bulk from UK/Continental and Other Europe to Asia, and in the opposite side from Asia to Europe, are passing through the Mediterranean Sea.

More detailed data concerning with Iron Ore, Coal and Grain are shown in Table 3.4.4 - 3.4.6.

TABLE 3.4.3 Total Dry Bulk Flow in 1994

to-> from:	Thousand tonnes							
	UK/ Cont.	Mediterranean	Other Europe	North America	South America	Japan	Other Asia	Others
UK/Continent	1120	410	930	3140	690	250	6270	110
Mediterr.	1350	620	310	300	90	-	1930	50
Other Europe	16230	1760	3160	1370	2500	50	8830	1230
Africa	22210	10890	19520	3850	2220	9620	22190	580
N.America	45530	15610	17250	9980	9210	50970	50990	8710
S.America	65780	16600	13050	19060	2240	33360	40700	9300
Asia	8120	3170	1910	2680	1240	26540	28660	350
Australia	33330	7890	7150	3080	4660	116650	71010	5950
TOTAL	193670	56950	63280	43460	22850	237440	230580	26280
								874510

(Source) Fearnleys, World Bulk Trades 1995

TABLE 3.4.4 Iron Ore Trade Flow in 1994

to-> from:	Thousand tonnes							
	UK/ Cont.	Mediterranean	Other Europe	USA	Japan	Other Far East	Others	TOTAL
Scandinavia	13971	49	2144	61	-	934	1887	19046
Other Europe	1830	56	1516	-	-	207	8	3617
West Africa	5820	2716	1227	124	61	-	50	9998
Other Africa	3102	2089	3750	-	4579	5868	39	19427
North America	14964	536	1204	6749	1375	1387	123	26338
S.America Atl.	44888	8538	8384	6446	28965	21929	14983	134133
A.America Pac.	1234	-	-	134	4089	7175	680	13312
Asia	740	1905	615	-	20043	8266	1300	32869
Australia/N.Z.	19097	2631	1654	675	56978	41098	1993	124126
TOTAL	105646	18520	20494	14189	116090	88664	21063	382866

(Source) Fearnleys, World Bulk Trades 1995

TABLE 3.4.5 Coal Trade Flow in 1994

Thousand tonnes

to->	UK/ Cont.	Mediterranean	Other Europe	South America	Japan	Other Far East	Others	TOTAL
from:								
N.America	16171	9121	10878	7998	26364	12995	3816	87343
Australia	14658	4626	2397	5104	63395	28810	11328	130318
A.Africa	14229	3931	11665	1593	5612	11703	4972	53705
A.Am.Car.	9590	742	3760	1008	51	1455	5092	21698
China	1373	389	57	-	7481	12741	2258	24299
FSU	1080	2495	5606	-	4526	861	200	14768
Oth.E.Europe	7198	663	10217	1158	300	-	99	19635
West Europe	977	14	1154	-	-	-	93	2238
Others	4580	329	1990	-	9866	11173	1477	29415
TOTAL	69856	22310	47724	16861	117595	79738	29335	383419

(Source) *Fearnleys, World Bulk Trades 1995*

TABLE 3.4.6 Grain Trade Flow in 1994

Thousand tonnes

from->	USA	Canada	South America	Australia	Others	TOTAL
to:						
UK/Continent	5271	701	4906 -	-	45	10923
Mediterranean	4054	447	1607	65	1106	7279
East Europe	2126	115	313	985	2789	6332
Other Europe	1347	80	216	66	464	2173
Africa	14025	2099	283	1246	7609	25262
Americas	17093	4254	7706	624	4097	33774
Near East	3115	101	249	50	1180	4695
Indian Ocean	4997	2666	231	3872	5774	17540
Japan	20645	2564	1696	2058	3908	30871
Other Far East	18858	8213	2045	6706	8671	44493
Not specified	280	23 -	-	374	335	1012
TOTAL	91811	21267	19252	16046	35978	184354

(Source) *Fearnleys, World Bulk Trades 1995*

3.4.4 World Container Throughput

At the end of survey of international maritime transport, it is necessary to look at world container throughput. It is shown in Table 3.4.7. In 1995, 141.6 million TEUs of container were handled in the ports of all over the world. Regionally, the volume of containers are 61.8 million TEUs in East Asia, 33.1 million TEUs in Europe (including the Black Sea area), 21.9 million TEUs in North America and so on.

The world container throughput is expanding rapidly. Its average annual growth rate was 9.5% over 1980-95, and 10.3% over 1990-95.

Table 3.4.2 shows the container port throughput by East Mediterranean / Black Sea countries. Its total volume was 3.41 million TEUs in 1995. Best three of them are 730 thousands TEUs in Israel, 697 thousands TEUs in Greece and 603 thousands TEUs in Turkey.

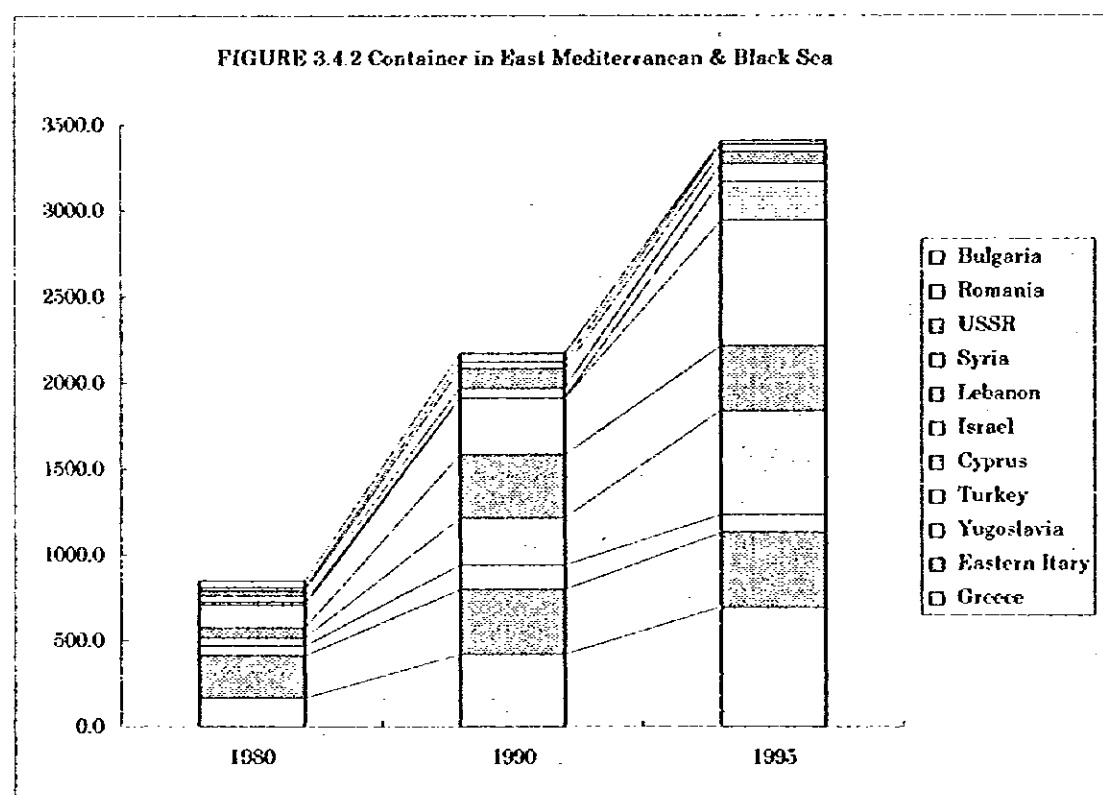


TABLE 3.4.7 World Container Throughput by Regions 1980-95

	1980	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
											estim.
East Asia	9.08	19.10	22.24	25.52	29.10	32.42	37.18	42.01	47.42	54.08	61.84
Europe	11.49	17.76	19.01	20.90	22.00	23.25	24.64	26.24	27.58	30.28	33.06
North America	9.92	13.42	14.24	15.00	16.04	16.49	16.96	17.95	18.48	20.31	21.85
Caribbean/C. America	0.96	2.68	3.01	3.06	3.28	3.56	3.08	3.42	4.59	5.05	5.39
South America	0.38	1.04	1.21	1.34	1.40	1.44	1.60	2.03	2.39	2.54	2.76
Middle East	1.38	2.32	2.36	2.48	2.70	2.90	3.71	4.37	4.77	5.10	5.40
Indian Subcontinent	0.26	1.08	1.27	1.50	1.61	1.83	1.97	2.13	2.55	2.92	3.17
Australasia & Oceania	1.61	1.95	2.02	2.23	2.39	2.33	2.51	2.66	2.88	3.20	3.46
Africa	1.27	1.74	1.80	2.01	2.13	2.42	2.74	3.02	3.48	4.06	4.66
TOTAL	36.35	61.09	67.16	74.04	80.65	86.64	94.39	103.83	114.14	127.54	141.59

(Source) Ocean Shipping Consultants LTD, *The World Container Port Market to 2010*

TABLE 3.4.8 Container Port Throughput by East Mediterranean/Black Sea Countries

	1980	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
											estim.
East Med./Black Sea	844.5	1521.3	1589.9	1721.7	1978.7	2168.5	2478.2	2641.7	2974.1	3278.6	3413.6
Greece	171.2	208.0	252.7	288.6	373.9	421.5	480.0	548.8	644.9	691.0	696.7
Eastern Italy	241.0	364.3	354.9	342.5	374.9	381.9	384.0	383.0	401.8	429.8	438.9
Yugoslavia	55.6	81.2	87.6	119.3	145.0	144.7	163.0	-	-	-	-
Slovenia	-	-	-	-	-	-	-	62.1	45.8	51.0	61.2
Croatia	-	-	-	-	-	-	-	38.0	44.6	44.3	48.8
Turkey	52.0	107.0	158.8	172.1	202.3	265.4	341.7	396.8	455.4	569.4	603.2
Cyprus	56.5	197.3	206.9	245.6	291.5	369.3	384.3	323.5	351.9	414.1	372.3
Israel	131.2	295.6	274.8	307.5	329.7	331.5	459.3	493.9	598.9	653.1	729.5
Lebanon	22.0	26.6	7.5	6.9	3.5	-	-	131.2	194.4	210.0	230.0
Syria	31.0	84.7	64.6	54.2	46.1	54.8	67.3	82.8	92.6	99.0	105.0
USSR	35.0	84.1	106.2	105.0	127.0	119.6	141.8	-	-	-	-
Ukraine	-	-	-	-	-	-	-	102.6	74.1	69.5	65.0
Romania	17.0	37.5	38.0	40.0	39.7	33.7	28.5	46.3	50.2	32.4	41.0
Bulgaria	32.0	35.0	37.9	40.0	45.1	46.1	28.3	32.7	19.5	15.0	22.0

(Source) Ocean Shipping Consultants LTD, *The World Container Port Market to 2010*

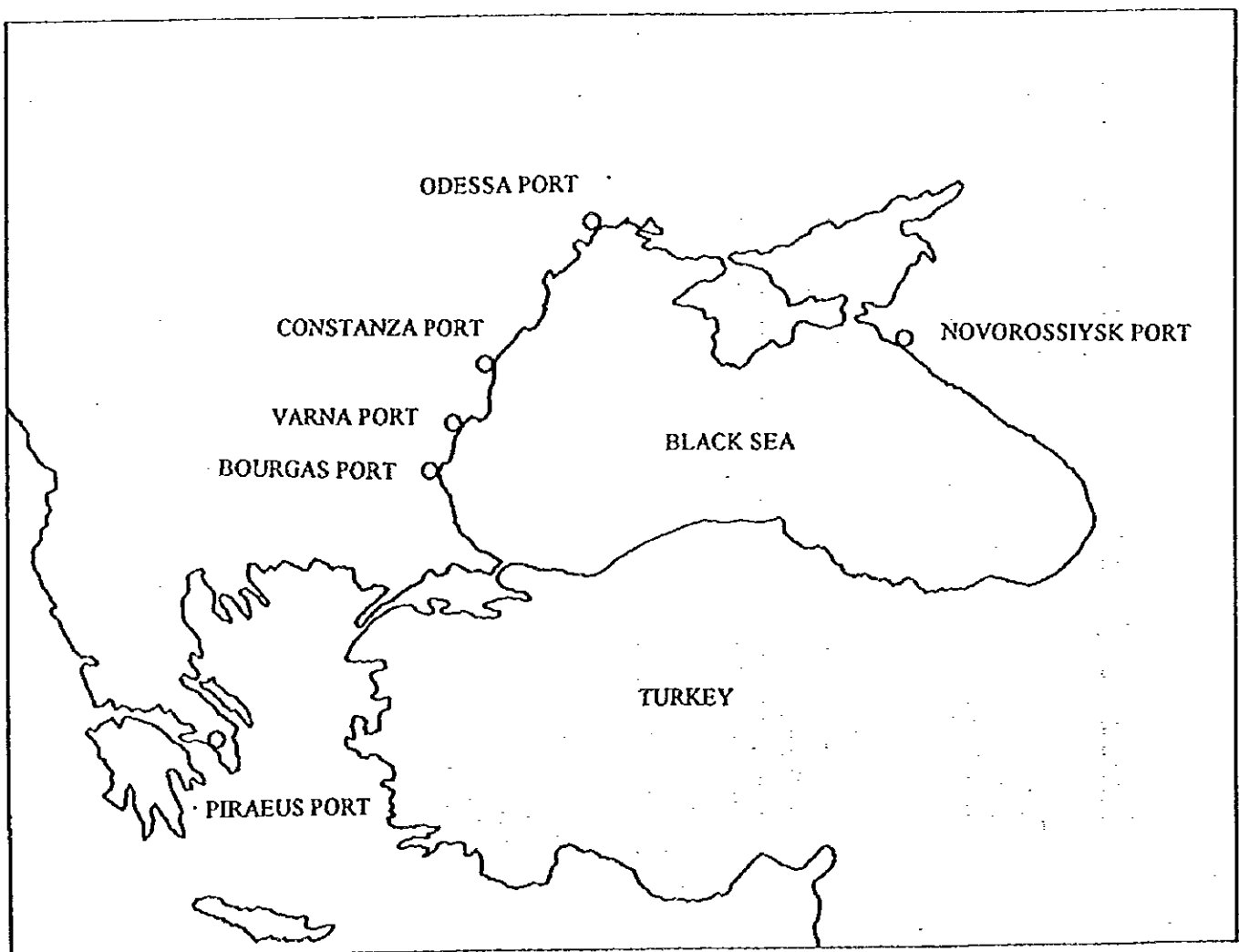
3.5 Ports around the Black Sea

The Study Team visited the following ports in order to evaluate the roles of the Sea of Marmara in relation with the traffic through the Black Sea and the Aegean Sea.

- (1) Port of Constantza
- (2) Port of Bourgas
- (3) Port of Varna
- (4) Port of Odessa
- (5) Port of Novorossiysk
- (6) Port of Piraeus

Location of the visited ports are shown in Figure 3.5.1.

FIGURE 3.5.1 Location of the Ports Visited by the Study Team



3.5.1 Port of Constantza

(1) Present Port Facilities

Port of Constantza, the largest port in Romania and one of the largest ports on the Black Sea, comprises a total area of 3,626 hectares of which land and water area is 1,784 hectares and 1,842 hectares respectively. The Port is divided into two sections: the North Port, where most cargo operations take place and the South Port, where there is ample room for establishing new port facilities. Layout of the port facilities is shown in Figure 3.5.2.

At present there are 103 berths with a total quay length of 25 km. The North Port is entirely operational and consists of 12 basins with water depth between 7.0 and 13.5 m, 78 berths with a quay length of 15 km and specialized terminals for ore, coal, oil products, chemical products, rolled metals, containers and general cargo. The South Port is partly operational and has 25 operational berths with a quay length of 10 km. The water depth of the quay ranges from 13.5 to 19m. Ore, coal, phosphate, crude oil and derived products, rolled metals and general goods are handled at the South Port. There are also a ferryboat terminal and a RO/RO terminal. The above mentioned data for each Port is summarized in Table 3.5.1.

TABLE 3.5.1 General Data in Constantza Port

Characteristics	U/M	North Port	South Port
Total Area	ha	789	2,837
Land area	ha	484	610
Water area	ha	305	2,227
Breakwater length	km	3.5	10.46
Quay length	km	15	10
Number of berths	no.	78	25
Depths in the basins	m	7-13.5	7-19
Traffic capacity	mil/tons/yea	63.5	20
Ship size	DWTx1000	65-80	165

The container terminal is located in the North Port and has one berth with a length of 232 m, depth of 10.2 m and a storage yard of 3 hectares. The handling is performed with two gantry cranes of 40.7t each, two transtainers of 32t each etc. The list of above mentioned berths and their main commodities of cargo is shown in Table 3.5.2.

TABLE 3.5.2 Berths and Cargo Commodities in Constantza Port

NO. OF BERTH	LENGTH (m)	DEPTH* (m)	USE
1	2	3	4
Passenger berth	294	9.30	
Vehicles	454	8.60	cars, tractors, other
1	131	10.80	general cargo
2	132	11.00	general cargo
3	139	10.90	general cargo
4	140	11.10	general cargo
5	127	11.00	general cargo
6	101	10.10	general cargo
7	98	10.80	general cargo
8	112	8.70	general cargo
11	138	8.20	perishable general cargo
12	141	8.20	general cargo for warehouse
13	122	7.46	general cargo for warehouse
14	122	7.40	general cargo for warehouse
15	138	7.60	general cargo for warehouse
17	112	7.00	grains - silo
1	2	3	4
18	112	7.80	grains - silo
19	113	7.40	edible oil, molasses
20	125	6.10	general cargo
21	125	6.70	general cargo
23	141	6.10	wood, building materials
24	141	7.20	grains - silo
31	230	10.60	grains
32	230	9.70	grains+groat
33	218	8.80	grains
35	208	9.40	general cargo+rolled metals
36	208	9.40	general cargo
37	208	10.00	general cargo
38	208	10.80	equipments, installations
39	200	10.60	equipments, installations
40	208	10.50	equipments+general cargo
41	208	10.50	general cargo+rolled metals
42	208	10.80	general cargo+rolled metals
43	209	10.90	general cargo+rolled metals
44	220	10.90	general cargo+equipments
45	224	10.20	metal products+rolled metals
46	224	10.70	metal products+rolled metals
47	224	11.00	cement, wood, build. materials
48	224	11.00	cement, wood, build. materials
49	235	9.90	cement, wood, build. materials
50	235	8.90	cement, wood, build. materials

TABLE 3.5.2 Berths and Cargo Commodities in Constantza Port (cont.)

51	235	8.90	cement, wood, build. materials
52	232	10.20	containers
53	220	9.10	perishable foods
54	234	9.10	packed chemical products
55	234	9.80	packed chemical products
56	234	10.40	packed chemical products
57	234	10.70	packed chemical products
58	182	9.70	packed chemical products
59	234	11.40	packed+bulk chem. products
60	234	9.20	packed+bulk chem. products
62	234	6.50	phosphate+apatite, bulk
63	220	9.60	bulk urea
64	215	9.60	coal, coke, ore
65	215	8.40	coal, coke, ore
66	215	11.40	coal, coke, ore
67	215	11.50	coal, coke, ore
68	215	11.40	bulk cement+bagged cement
69	305	10.80	oil products
70	305	11.50	oil products
72	305	11.10	oil products
73	305	11.10	oil products
75	305	12.50	crude oil+oil products
76	305	12.50	crude oil+oil products
79	400	17.80	crude oil+oil products
1	2	3	4
80	305	17.80	coal, coke, ore
81	307	16.60	coal, coke, ore
82	292	15.30	coal, coke, ore
83	250	12.80	coal, coke, ore
84	250	10.90	coal, coke, ore
85	356	10.90	coal, coke, ore
94	238	4.30	bulk transshipment into barges
95	228	4.30	bulk transshipment into barges
96	238	4.30	bulk transshipment into barges
108	148	6.60	general cargo+bulk
109	145	8.00	general cargo+bulk
110	198	8.00	general cargo+bulk
111	221	11.30	general cargo+bulk
112	222	11.30	general cargo+bulk
113	221	11.30	bulk cement
114	201	12.10	general cargo
115	228	11.80	general cargo
116	228	11.80	general cargo
117	240	11.80	cars terminal
118	217	11.80	cars terminal
120	255		ferry-boat
121	214	13.20	Ro-Ro
122	214	13.20	bulk cement

*depth is meant as minimum depth at the berth, measured on March 30th, 1995

(2) Handling Cargo

The Port of Constantza is characterized as a bulk port, as 82% of the total throughput are liquid and dry bulk commodities in 1995. The rest of the cargo, i.e. 18% of the total throughput, is general commodities, among which 2% of the total throughput are container cargo.

In terms of the past trend of the throughput handled, after reaching its peak in the late 1980's when 65 million tons of annual throughput was handled (making it the fifth largest European port in terms of annual throughput, it decreased sharply until 1992 when 27 million tons of annual throughput was handled. This decrease was caused by revolution of the regime, however the throughput has recovered gradually since then and reached 35 million tons in 1995. The actual cargo throughput by each commodity group is shown in Table 3.5.3 -3.5.5.

TABLE 3.5.3 Cargo Throughput by Type of Cargo		
in Constantza Port		(mill. tons)
	1994	1995
GENERAL CARGO		
Import	0.61	0.37
Export	4.03	4.92
Transit	0.43	0.22
Total	5.07	5.51
CONTAINERS	0.39	0.68
SOLID BULK		
Import	7.44	8.36
Export	3.22	4.06
Transit	0.22	1.14
Total	10.88	13.56
LIQUID BULK		
Import	8.83	11.75
Export	5.04	3.40
Transit	0.20	-
Total	14.07	15.15
TOTAL	30.41	34.90

**TABLE 3.5.4 Container Cargo Throughput
in Constantza Port**

	1994	1995
Import		
TEUs	19,687	35,628
Tons	166,010	293,508
Export		
TEUs	21,597	32,924
Tons	226,476	388,545
TOTAL		
TEUs	41,284	68,552
Tons	392,486	682,053

**TABLE 3.5.5 Cargo Throughput by Commodity
in Constantza Port (thousands of tons)**

	1994	1995
IMPORT	7,440	8,364
Phosphate	710	632
Ores	4,125	5,035
Coal, coals	2,210	2,697
Cereals	395	0
EXPORT	3,224	4,060
Urea	579	777
Ores	80	67
Coal, coals	345	514
Cement	2,220	1,848
Cereals	0	854
TRANSIT	219	1,142
Cereals	55	350
Ores	164	792
TOTAL	10,883	13,566

The main solid bulk imports have been coal, coke, ores, phosphate and exports have been coke, coal, ores, cereals, cement and urea. The recent increased imports of ore, coal and coke are indicative of the recovery of the Romanian metallurgical industry. The main liquid bulk import has been the crude oil while processed oil products have accounted for most exports.

Regarding the general cargo, exports consist of textiles and leather products, paper, wood and furniture, chemical products, glass and construction materials, industrial equipment, and imports consist of food and vegetables, consumer goods and industrial equipment.

In 1995 container cargo throughput amounted to 680,000 tons (68,552TEUs). The main feeder lines calling at Constantza Port are as follows: Zim Israel Nvigation, Compagnie Maritime d'Affretement Marseille, Romline Constantza, Blue Container Line Dealmar Piraeus, Metz Container Line Limassol.

The transit cargo of 1995 amounted to 1.368 mil. tons, excluding container cargo, however the Port Administration expects it to increase in the future.

(3) Danube-Black Sea Canal

The Trans-European Waterway System Rhine-Main-Danube was connected with the Black Sea by the completion of the Danube-Black Sea Canal in 1984. The Canal consists of the main canal which ends in the Constantza Port and the northern branch Poarta-Alba-Midia which links the main canal with Midia Port and Tasaul lake.

According to the EEC-UNO standards, the main canal of the Danube-Black Sea Canal ranks in the 'F' class of inland canals (length 64.4km, width 90m, water depth 7.0m, bridge clearance 17m, 2 double locks at Cernavoda and Agigea, 3 river ports and allows convoys of max. 6 barges of 3,000t each or 1 self propelled vessel of 5,000t). In order to transship cargo into barges the South Port has a specialized river-maritime basin with a depth of 7.0 m.

The annual capacity of the cargo through the Canal is around 60 mill. tons, while the cargo carried through the Canal in 1995 amounted to 9.23 mil. tons, of which foreign cargo volume is 1.20 mil. tons and domestic cargo volume is 8.04 mil. tons.

(4) Future Development Plan

The first priority for the Port is given to a new container terminal which is now under construction in the South Port. The feasibility study has been already worked out and it foresees carrying out the terminal construction in three stages as follows:

- the first stage: two berths equipped with two gantry cranes of 50t, traffic capacity of 160,000 TEUs/year;
- the second stage: one more berth and three gantry cranes of 50t, traffic capacity foreseen to reach 455,000 TEUs/year;
- the third stage: two more berths and three gantry cranes of 50t; the traffic will reach a final capacity of 800,000 TEUs/year.

The background of the plan for the new container terminal is explained by the Constantza Port Administration as follows:

- The existing terminal in Constantza Port has a capacity of 70,000 TEUs/year and the traffic increased steadily in the last four years so that the capacity of the terminal will be covered fully in the near future.
- Free Trade Zone is planned to be established behind the new container terminal and many of the goods to/from the Zone are expected to be carried by containers.
- In the near future, shipping Companies and shippers are expected to select the load center somewhere in the Black Sea region.

In the above mentioned feasibility study, future cargo throughput of non-bulk and containers are forecast as shown in Table 3.5.6 and 3.5.7. In the low growth scenario containerized cargo is forecast to grow from 0.7 million tons in 1995 to 2.8 million tons in 2010. In the high growth scenario, container throughput is expected to reach a total of 4.9 million tons.

**TABLE 3.5.6 Throughput Scenarios of Non-Bulk Commodities
in Constantza Port (in mill. tons)**

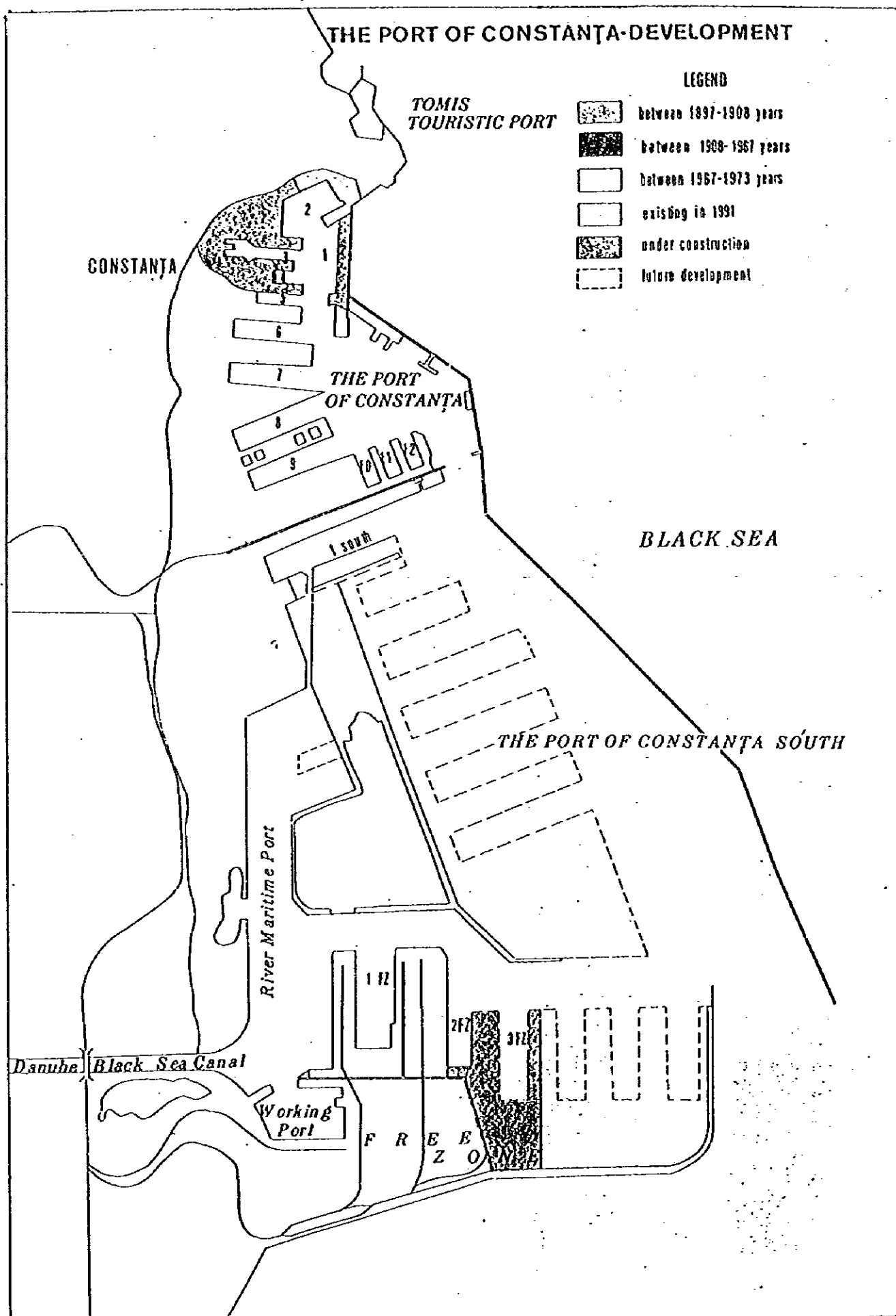
GC/Containers	1995	2000	2005	2010			
	Low	Low	High	Low	High	Low	High
Domestic Traffic	5.29	7.4	9.4	9.3	13.3	11.7	17.9
Free Zone Traffic	-	0.6	1.6	1.1	2.8	1.5	4.0
Transit/Transshipment	0.22	0.7	1.3	0.8	2.1	0.9	3.3
TOTAL	5.51	8.7	12.3	11.2	18.2	14.1	25.2
container total	0.7	0.8	1.3	1.5	2.9	2.8	4.9

**TABLE 3.5.7 Container Throughput Forecast
in Constantza Port (TEU)**

Year	Free Trade Zone	Rest of Port	Total
1995	-	68,552	68,552
2000	30,000-80,000	55,000-65,000	85,000-145,000
2005	50,000-125,000	110,000-195,000	160,000-320,000
2010	75,000-200,000	235,000-340,000	310,000-540,000

The new container terminal is planned to cover an area of 81 hectares and accommodate 6 container berths between 14 and 16m in depth, each 300m long, with a back-up area of 500m behind the berth for container yard and transport operations. The construction of the terminal excluding the superstructure has been already completed.

FIGURE 3.5.2 Layout of the Port Facilities in Constantza Port



3.5.2 Port of Bourgas

(1) Present Port Facilities

The Port of Bourgas is the largest port in Bulgaria and has 28 berths with a total quay length 3,470 m. The Port is divided into four sections, i.e. East Harbour, Bulk Cargoes Harbour, West Harbour and Oil Harbour. The length, depth and number of berths in each harbour are shown in Table 3.5.8.

TABLE 3.5.8 General Data in Bourgas Port

	East Harbour	Bulk Cargoes Harbour	West Harbour	Oil Harbour	Lozovo Base- house	Total
Quay Length,m	1,550	750	870	300	-	3,470
Total Number of Berths	14	5	6	3	-	28
Operative Berths	10	5	6	3	-	24
Water Depth,ft						
At the port mouth	41					
In the Aquatoria	29-36	36	36	24-45	-	24-45
In the Seaship Berths	24-33	36	36	24-45	-	24-45
Storage Facilities,sq m	78,500	36,000	202,000	-	36,000	-
Covered Area	38,700	4,000	11,000	-	14,400	-
Open Air Space	39,800	32,000	191,000	-	21,600	-
Road Network,m	2,500	1,800	2,100	3,000	13,000	22,400
Railways Length,m	1,700	1,200	1,500		1,800	6,200
The Port Can Handle						
Ships of Deadweight Up to, t	25,000	50,000	40,000	100,000	-	-

(2) Cargo Handled

In 1995 the cargo handled in the Port reached 24 mill. tons, of which 8 mill. tons of throughput is for dry bulk and general cargo including containerized cargo and 16 mill. tons of throughput is for liquid bulk cargo. 47% of the entire cargoes throughout the country including those carried by rail and truck are handled at the Port of Bourgas. The main hinterland of the Port exists in the south part of Bourgasia and most of the bulk cargo is transported by rail.

The main commodities of cargo include oil products, tobacco and bentonite for export and coal and iron ore for import.

Transit cargo throughput amounted to 5.4 mill. tons and its main hinterland is Cyprus and Macedonian countries such as Yugoslavia.

Recently containerized cargo has increased by 15% every year and reached 36,000 TEUs in 1995. Approximately 40% of the total containerized cargo is imported and approximately 60% is exported. The containerization ratio amounted to 15% in 1995.

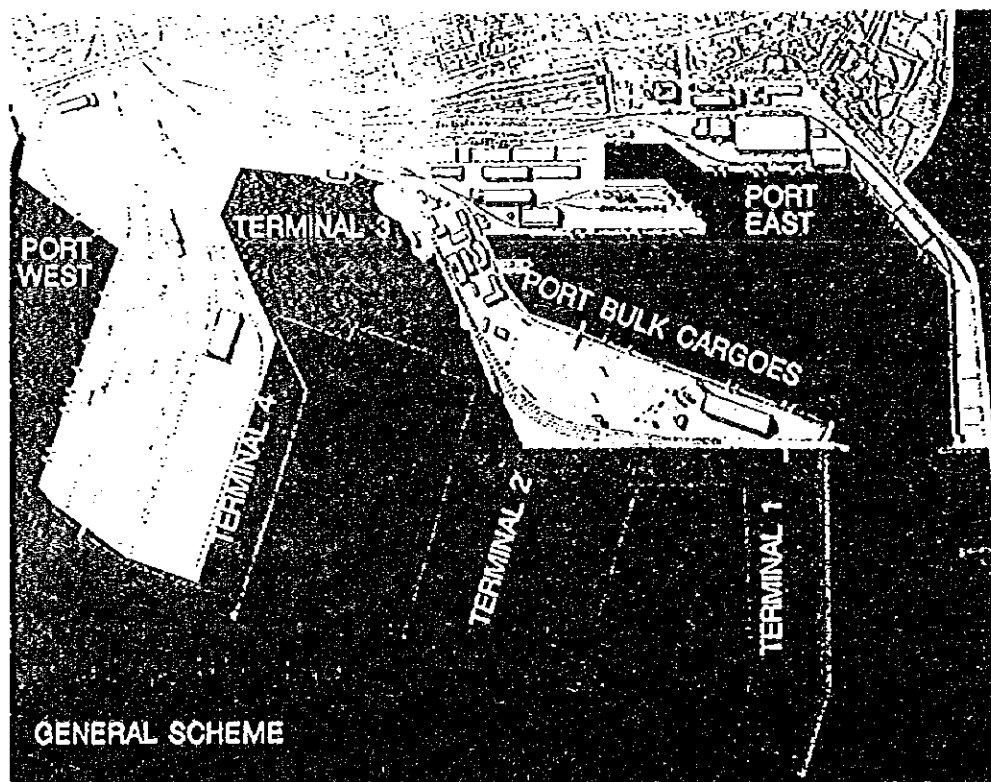
(3) Future Development Plan

According to the Master Plan of the Port, container cargo and general/bulk cargo throughput is forecast to increase three times and 1.9 times as that of 1995 in 2015 respectively. Consequently, in 2015, the annual container cargo throughput is expected to reach around 100,000 TEUs, of which approximately 30% of the throughput is regarded as transit cargo.

The future layout of the terminals in the Master Plan is shown in Figure 3.5.3. Main commodity of the cargo planned to be handled at each Terminal and its usage are shown as follows:

- Terminal 1: Bulk
- Terminal 2: General Cargo, Bulk
- Terminal 3: Ro/Ro, Ferry
- Terminal 4: Container

FIGURE 3.5.3 Future Layout of the Terminals in Bourgas Port



The number of new berths planned in this development amounts to between 12 and 16, including 3 berths of container terminals which are 40ft in depth. Extension of the breakwater and container terminals has been already completed.

3.5.3 Port of Varna

The port of Varna is situated along the west coast of the Black Sea at latitude 43° 12' N and longitude 27° 55' E. It was opened for operations on 18 May 1906. Port of Varna Ltd. is a limited company based in the city of Varna. It includes the following port installations spread over a wide geographical area.

- Varna East
- Varna West
- Balchik
- Varna Thermoelectric Power Station

There are 33 berths available, including a passenger terminal. The depths alongside the berths are 11 m in Varna East and 10 m in Varna West. From Varna East a dredged channel runs westward for some 25 km connecting two inland lakes with the Black Sea. At the far western end is the port of Varna West.

Total wharf length of Varna West is 2,000m, and maximum draught is 11m. Main handling commodities are general cargo, machines, technical equipment, metal, fertilizer, and grain

Total wharf length of Varna East is 3,300m, and maximum draught is 10m. Main handling commodities are coal, coke, phosphate, apatite, ores, chemicals, sugar and cement.

Total wharf length of Balchik is 150m, and maximum draught is 7m. Main handling commodities are grain and cattle

Total wharf length of Varna Thermoelectric Power Station is 400m, and maximum draught is 7m. Main handling commodity is coal.

TABLE 3.5.9 Cargo Traffic by Port

(unit : ton)

Year	1989	1990	1991	1992	1993	1994	1995
Varna East	2,360,000	1,447,000	1,470,000	1,411,000	1,010,000	801,000	1,266,000
Varna West	2,640,000	2,327,000	1828,000	1,911,000	1,999,000	2,977,000	3,619,000
Power Station	2,087,000	2,141,000	1,885,000	1,304,000	1,260,000	877,000	413,000
Balchik	129,000	178,000	71,000	198,000	17,000	6,000	147,000
Total	7,216,000	6,093,000	5,254,000	4,824,000	4,286,000	4,661,000	5,445,000

TABLE 3.5.10 Cargo Volume by Type of Cargo

(unit : ton)

Year	1989	1990	1991	1992	1993	1994	1995
Bulk	5,213,000	4,302,000	3,764,000	3,263,000	3,059,000	3,542,000	4,128,000
Liquid	233,000	298,000	274,000	316,000	267,000	291,000	296,000
General	1,770,000	1,493,000	1,257,000	1,245,000	960,000	828,000	1,021,000

TABLE 3.5.11 Container Handling Volume

Year	1989	1990	1991	1992	1993
Number	40,136	35,295	26,775	21,603	26,634
Ton	405,253	342,774	217,066	202,458	291,372

TABLE 3.5.12 Forecast Cargo Volume

(unit : ton)

Year	1995	2000	2005
Coal	754,000	2,756,000	3,571,000
Grain	762,000	1,000,000	1,000,000
Fertilizer	1,562,000	1,502,000	1,709,000
Cement	1,114,000	607,000	704,000
Soda Ash	767,000	175,000	162,000
Sugar	157,000	268,000	492,000
Minor Ores	43,000	19,000	8,000
Containers	320,000	632,000	839,000
Ro-Ro	10,000	12,000	15,000
Others	305,000	1,050,000	515,000
Total	5,445,000	8,021,000	8,884,000

With the revival of the Bulgarian economy there has been a substantial growth in the cargo traffic of the Port of Varna. Following 1993 when the traffic was at its lowest level, in 1995 the cargo volumes increased by 121 % and in 1996 it is anticipated that they will rise by 139 % compared to 1993.

The port is visited annually by approx. 2500 sea going vessels. Varna East and Varna West have container liner between,

- The continent and UK with transhipment to USA and Japan
- Illichevsk and Odessa in Ukraine

- Poty in Georgia
- Limassol in Cyprus
- Alexandria in Egypt

There is a weekly Ro-Ro service to Novorossiysk, Russia and Poty, Georgia.

The office working hours for the basic dockers, drivers and warehouse workers are as follows.

- Varna East and Balchik operate on a 2 shift system from Monday to Friday from 5:15 to 22:45.
- Varna West and the port of power station operate on a 2 shift system covering 24 hours a day , 365 days a year with the shift change at 7:00 and 19:00 .
- Both container terminals operate on a 24 hours system.

As a result of the grant extended by the European Bank for Reconstruction and Development, the Port of Varna has a Master plan for its future development up to 2005 . Implementing the Master plan, in the beginning of 1996, Varna East is commencing a project for renovation and modernization of its container handling facilities which is to be completed in one years time.

Another project is expected to start at the end of 1996 for equipping one berth at Varna West with grain handling facilities, including silos and the relevant equipment for handling both heavy and light cereals.

3.5.4 Port of Odessa

(1) General

Main ports of Ukraine in the Black Sea are Odessa, Ilyichevsk, and Yuzhnyy. Location of these ports are on the north west shore of the Black Sea. These ports are located very near one another. Ilyichevsk is located 25 km south west from Odessa city, and Yuzhnyy is located 30 km north east from Odessa city. However, these ports are managed by different port authorities. Main cargoes handled in these ports are as follows.

FIGURE 3.5.4 Port of Varna

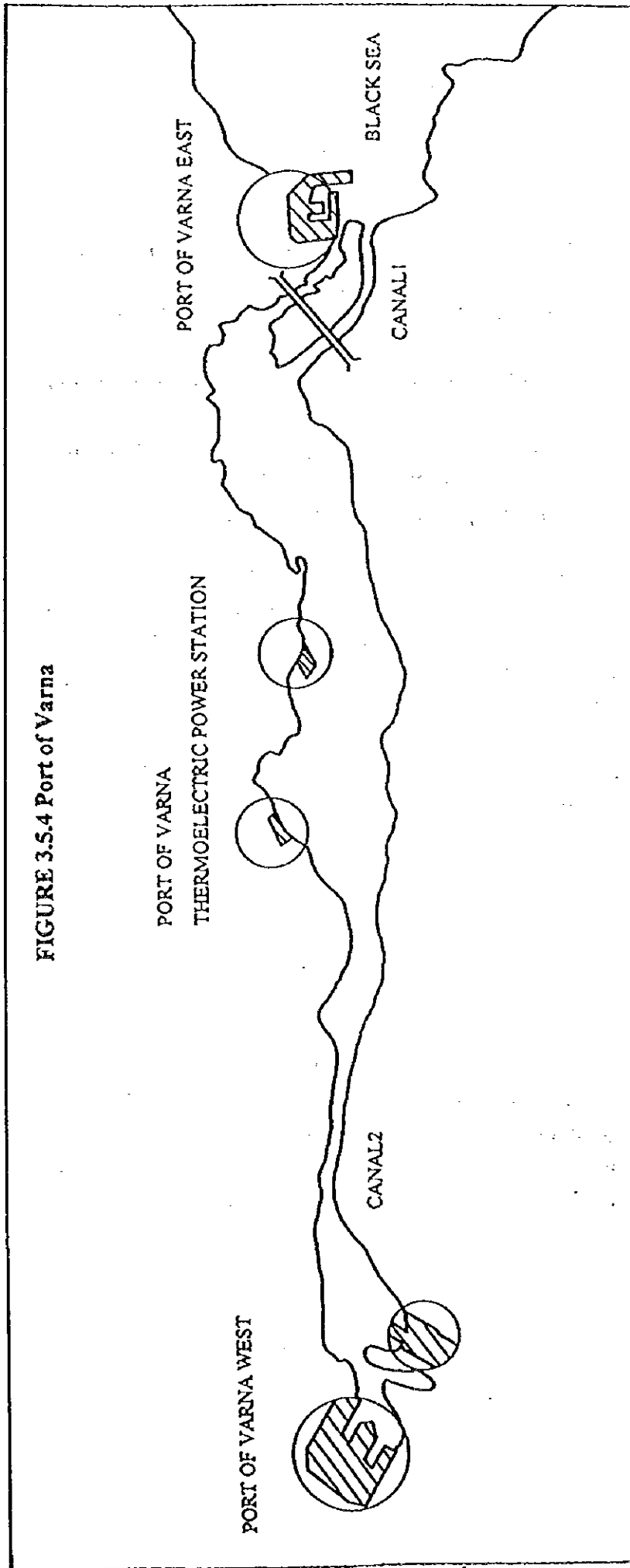


FIGURE 3.5.5 Port of Varna East

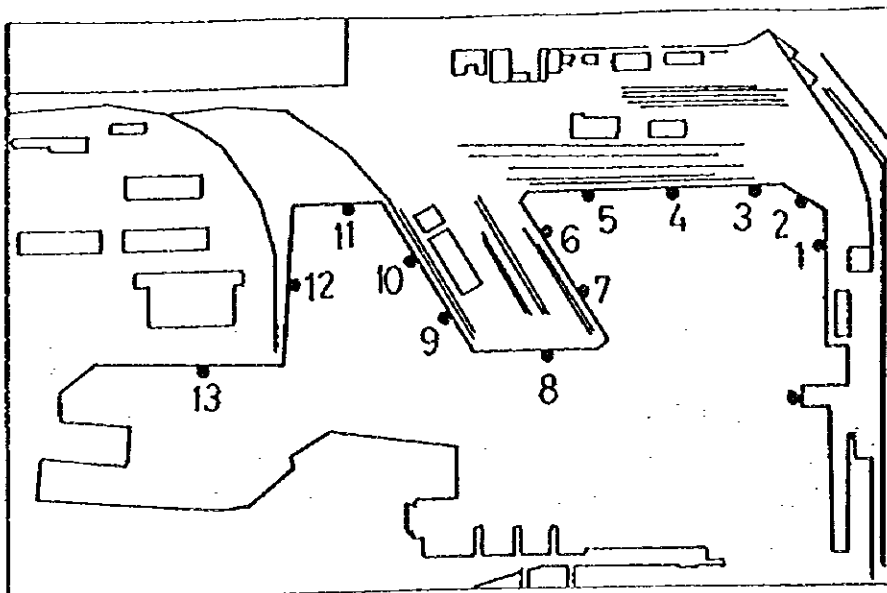


FIGURE 3.5.6 Port of Varna West

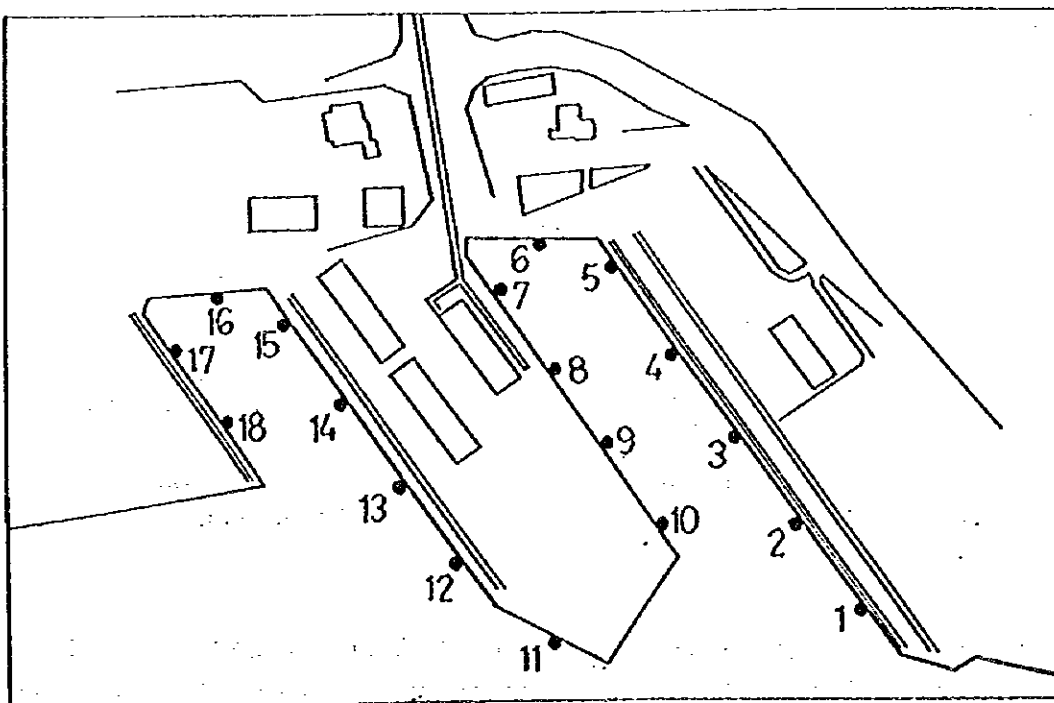


TABLE 3.5.13 Main cargoes handled in the Ukrainian Ports on the Black Sea

	Import	Export
Odessa	Container, Grain, Sugar, Oil	Container, Metal, Steel, Paper, Fertilizer
Ilyichevsk	Container, Ore, Coal, Fertilizer, Grain, Crude Oil, Chemicals	
Yuzhnyy	Superphosphoric Acid	Coal, Metal, Liquefied Ammonia, Bulk Carbarnide, Methanol

Port of Odessa was constructed and opened about 200 years ago, and has been the main gateway of Ukraine for passengers and cargo throughput its history. There is a industrial area behind the Port of Odessa, so that Odessa has an important role in the trade of Ukraine. However, since the residential area of Odessa city is just behind the port, there is not much area remaining around the port. Main cargo handled in the port of Odessa is transit cargo from Russia and export cargo from Ukraine.

(2) Present Port facilities

There are 27 berths for cargo handling, 6 passenger berths and 6 oil tanker berths. Total length of the berths is about 7 km. No.2 and No.3 berths are specialized in the handling of container. Water depth of the berth is -11.5m. There are 2 gantry cranes for container. Area of container terminal is about 150,000 m². Layout of the port is as shown in the Fig. 3.5.8.

(3) Handling Cargo

Main cargo handled in this port is grain and sugar as import, and steel, paper and fertilizer as export. Cargo handling volume has been in decline recently due to an economic recession in Ukraine after the collapse of the Soviet Union. Cargo handling volume at year 1990 and 1995 is as follows.

TABLE 3.5.14 Cargo handling volume at the Port of Odessa in year 1990 and 1995

	1990	1995
Dry Bulk Cargo	11 million ton	5.5 million ton
Oil, Oil Product	20 million ton	12million ton

Source : Port of Odessa

Main trading countries of Russian transit cargo and Ukrainian export cargo are South East Asian countries and European countries. Trading countries and cargo volume are shown as Table 3.5.17.

Container is a main cargo of the port of Odessa. Handled volume of containers at the port of Odessa is about 19, 000 TEU, and 230,000ton in 1993. Details of container cargo are given in the following table.

TABLE 3.5.15 Container handling volume at the Port of Odessa (Year 1993)

	Full TEU	Empty TEU	Total TEU	Tonnage (ton)
Import	11,107	204	11,311	144,400
Export	5,433	2,313	7,746	84,900
Total	16,540	2,517	19,057	229,300

Source : Containerisation International Year Book 1995

Detail of container liners and volume of containers handled by each liners in 1995 is shown in the following Table 3.5.16.

TABLE 3.5.16 Container Handling Volume at Port of Odessa - 1995

Shipping Line (Country)	TEU
AMAC (Cyprus)	4,008
C.P.INTERNESH (Israel)	3,489
FORMAT (Bulgaria)	4,175
C.M.T (Greece)	4,772
CMA (Egypt)	8,030
CMN (Marseilles)	4,210
ZIM (Israel)	22,762
VERNAL	143
Total	51,589

Source : Port of Odessa

(4) Future Development Plan

A new container terminal is under construction. Area of the new terminal is about 100,000 m². The port expects to handle over 100,000TEU containers after the completion of this terminal.

FIGURE 3.5.7 Port of Odessa

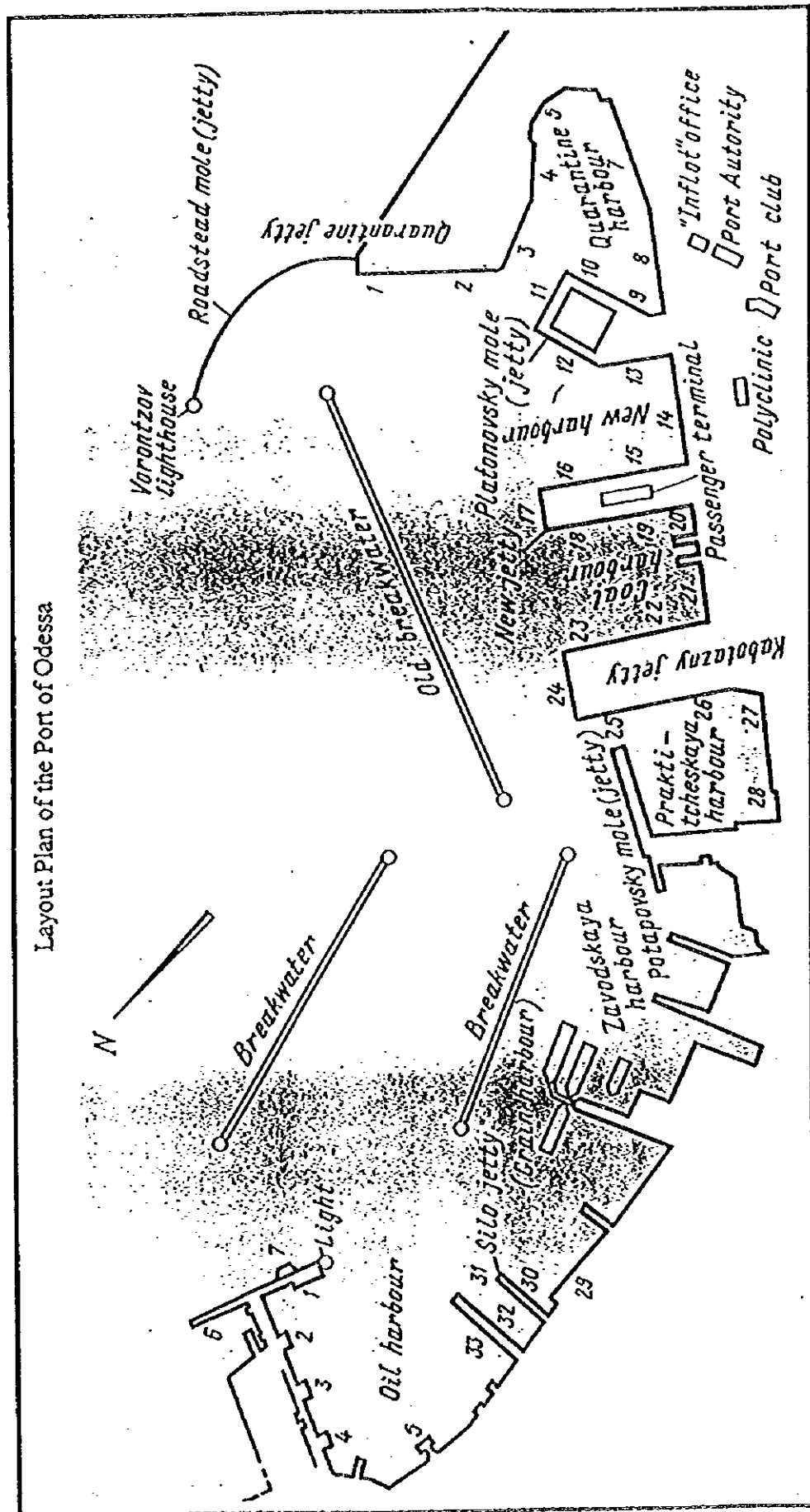


TABLE 3.5.17 Export Cargo Handling Volume at Port of Odessa (Unit:1000ton)

Export Country	Metal	Paper	Fertilizer	Grain
Transport Cargo from Russia				
Taiwan	165			
Thai	156	80	5	
Philippine	101			
Egypt	16	40		
Italy	13		11	
Turkey	12	60	30	
Vietnam	38			
India	44			
Indonesia	100			
China	73		213	
Others	544	20	26	
Total	1,261	200	285	
2. Export from Ukraine				
Taiwan	97			
Thai	230			
Philippine	75			
Egypt	43			
Italy	37			634
Turkey	95			
China	660			
Vietnam	70			
Syria	42			
Spain	7			180
Israel	13			80
Morocco	55			
Others	252			
Total	1,675			894
Total Export Cargo	2,936	200	285	894

Source : Port of Odessa

3.5.5 Port of Novorossiysk

(1) General

Main Russian ports in the Black Sea are Novorossiysk and Sochi. Novorossiysk is located at the north east part of the Black Sea, in Novorossiysk Bay. Novorossiysk is Russia's Largest port in the Black Sea. Sochi is located on the east shore of the Black Sea, at the mouth of the Sochi River. There is a passenger terminal and a specialized berth for hydrofoils. Cruise ships visit the port. Main cargoes handled in these port are as follows.

TABLE 3.5.18 Main cargoes handled in Russian ports

	Import	Export
Novorossiysk	Grain, Sugar, Alumina, Food Product, Manufactured Good	Crude Oil, Oil Products Cement, Timber, Steel, Industrial Equipment, Machinery
Sochi	Building Materials in bulk, Car, Fruit	

(2) Present Port facilities

The port area of Novorossiysk port consists of two separate harbors, namely the Dry Cargo Harbor and Sheskharis Oil Harbor. The Dry Cargo Harbor comprises a total of 35 berths. Maximum depth of the berth is 12.5m. Specialized berths include a timber wharf of 457.2m long with depth alongside ranging from 6m to 8.5m, a cement quay located near the eastern part of the harbor with a depth of 8m, and berths for wine and oil tankers, and cold storage basin situated in the north west corner of the harbor. Passenger terminal is located at west side of the harbor and comprises 4 berths. Container and RO/RO cargo are handled at the berth No.14. Cement is handled at berth No. 2 & 3, and ore is handled at berth No. 8.

Sheskharis Oil Harbor is located at the south east side from Dry Cargo Harbor. There are 8 tanker berths capable of accommodating vessels of up to 60,000DWT with depth alongside of up to 14.5m, and also a deep water berth with 20m depth alongside to take vessels up to 250,000DWT and 19m draft. Layout plan of the port and facility is shown in Figure 3.5.8, and Table 3.5.19, Table 3.5.20.

Cargo handled at the Novorossiysk port is transported to its hinterland by mainly train, because the road condition is generally in poor.

FIGURE 3.5.8 Port of Novorossiysk

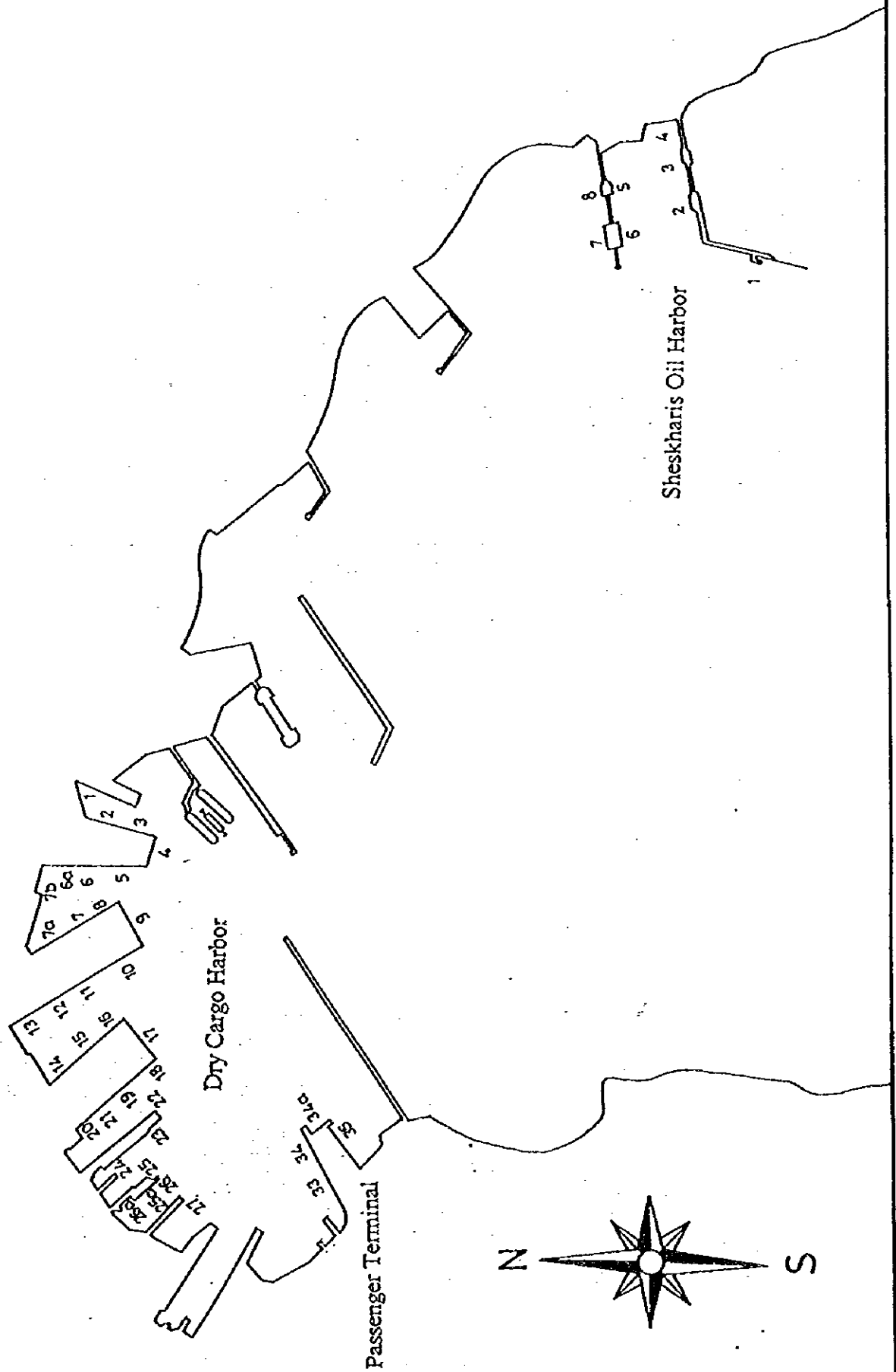


TABLE 3.5.19 Port Facility of Novorossiysk Port

No.	Berth	Length (m)	Depth (m)	Const. Year	Remarks
1	Berth No.1	171.30	5.50	1976	
2	Berth No.2	137.30	9.75	1973	Cement Berth
3	Berth No.3	223.00	11.50	1974	Cement Berth
4	Berth No.4	155.20	11.50	1920/1976	
5	Berth No.5	243.54	13.00	1979	
6	Berth No.6	166.00	9.75	1978	
6a	Berth No.6a	68.00	7.15	1978	
7	Berth No.7	165.00	8.25	1966	
7a	Berth No.7a	134.00	4.50	1966	
7b	Berth No.7b	258.00	3.50	1970	
8	Berth No.8	186.90	11.50	1968	Ore Berth
9	Berth No.9	239.70	11.50	1968	
10	Berth No.10	183.00	11.50	1966	
11	Berth No.11	198.00	11.50	1965	
12	Berth No.12	180.80	10.50	1965	
13	Berth No.13	165.00	8.25	1964	
14	Berth No.14	168.00	8.25	1981	Container & RO/RO
15	Berth No.15	280.00	8.25	1960	
16	Berth No.16	178.00	11.50	1962	
17	Berth No.17	239.50	11.50	1963	
18	Berth No.18	182.50	11.50	1961	
19	Berth No.19	181.00	11.50	1961	
20	Berth No.20	166.50	9.75	1959	
21	Berth No.21	155.00	7.40	1913/1995	
22	Berth No.22	257.50	13.50	1988	
23	Berth No.23	142.80	9.75	1931/1959	
24	Berth No.24	198.50	7.90	1926/1954	
25	Berth No.25	88.00	11.50	1962	
25a	Berth No.25a	78.00	3.90	1984	
26	Berth No.26	180.00	11.30	1924/1981	
26a	Berth No.26a	175.5	5.00	1989	
27	Berth No.27	180.00	10.00	1924/1981	
33	Berth No.33	240.00	8.25	1902/1956	Passenger Terminal
34	Berth No.34	209.00	9.75	1902/1956	Passenger Terminal
34a	Berth No.34a	70.30	9.75	1965	Passenger Terminal
35	Berth No.35	241.80	6.50	1902/1956	Passenger Terminal

Note : Numbers correspond to the layout plan

TABLE 3.5.20 Sheskhari Novorossiysk Oil Harbor

No.	Berth	Length (m)	Depth (m)	Const. Year	Remarks
1	Berth No.1	490.00	24.00	1978	Max. 250,000DWT
2	Berth No.2	250.00	14.50	1966/1978	Max. 60,000DWT
3	Berth No.3	205.00	11.50	1966/1978	
4	Berth No.4	162.50	4.50	1966	
5	Berth No.5	146.00	9.75	1965/1969	
6	Berth No.6	250.00	13.50	1965/1969	
7	Berth No.7	250.00	13.50	1965/1969	
8	Berth No.8	146.00	9.75	1965/1969	

Note : Numbers correspond to the layout plan

(3) Future Development Plan

In order to handle the increased future container cargo, new container terminal is now under construction at the south east side of the existing Dry Cargo Harbor between the Sheskhari Oil Harbor. Expected handling capacity of container at this new container terminal is about 13 million tons per year. In addition to this new container terminal, the port has a future development plan to construct new bulk cargo terminals and an additional container terminal at the far south east side of the existing port. The new container terminal is planned to have an area of 552ha and capacity of 35 million tons per year. Outline of the future development plan is shown in Figure 3.5.9

3.5.6 Port of Piraeus

(1) General

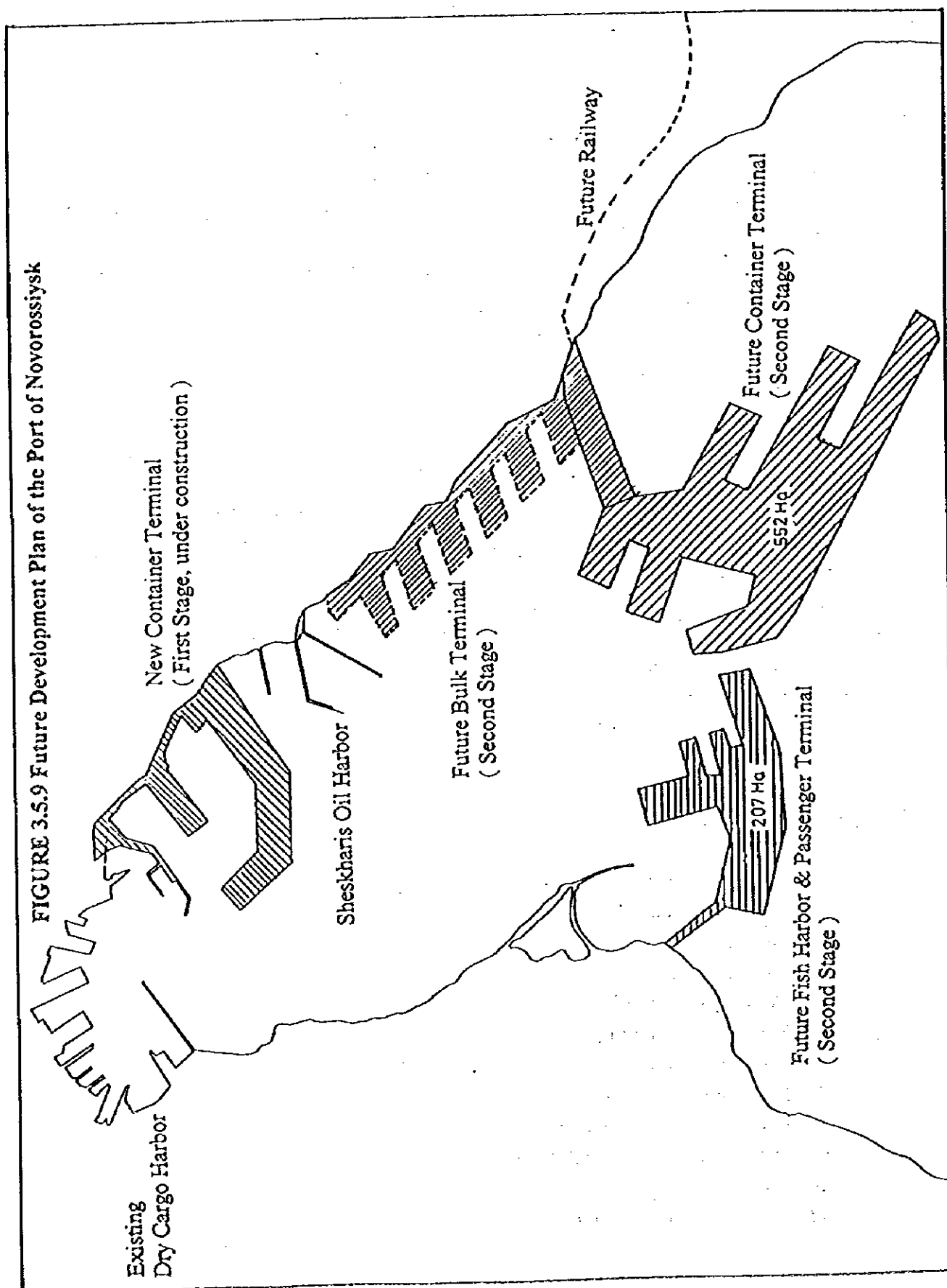
Origin of port dates back to about 5 B.C., and since then the Port of Piraeus has been playing an important role as a maritime transportation hub in the Eastern Mediterranean. The Port of Piraeus Authority was established in 1930 and it is a legal body of public entity, under the laws of the Hellenic Republic. The port of Piraeus Authority is responsible for the construction, maintenance of harbor works and for the programming, study, supervising and execution of all services and facilities provided to ships and passengers. Towage and ship repairs services are performed by private companies. The port of Piraeus Authority is a profitable organization, and is not being financed by the government and its operation and investments are covered by its own resources.

(2) Organization and Operation

Under the general manager, there are 12 divisions.

1. Stevedoring and Port operation
2. Free zone
3. Port services
4. Container terminal
5. Machinery and equipment
6. Administration
7. Financial
8. Purchases and provisions
9. Development and computerisation
10. Construction
11. Control and inspection

FIGURE 3.5.9 Future Development Plan of the Port of Novorossiysk



12. Training
13. Independent departments and bureau
 - Press and public relations Dept.
 - European union Bureau
 - Preservation Dept.
 - Legal advisory service
 - Emergency policy and planning bureaux

Operation is 24 hours and 365 days a year

(3) Cargo volume and passenger

The passenger port of Piraeus is the third most frequented port in the world, accommodating approx. 12,000,000 passengers annually.

TABLE 3.5.21 Number of Passenger

Year	1990	1991	1992	1993	1994	1995
Domestic	6,019,164	6,177,684	6,298,190	6,432,414	6,662,165	6,705,687
Overseas	715,196	385,519	649,993	661,809	673,222	692,706
Total	6,734,360	6,563,203	6,948,183	7,094,223	7,335,387	7,398,393

TABLE 3.5.22 Cargo traffic volume

(Unit : ton)

Year	1990	1991	1992	1993	1994	1995
Domestic	3,437,488	3,039,794	3,036,987	3,064,003	2,916,791	3,002,165
Overseas	6,471,913	6,827,955	6,481,470	5,573,447	5,836,000	7,374,113
Total	9,909,401	9,867,749	9,618,457	8,637,450	8,752,791	10,376,278

TABLE 3.5.23 Container Throughput

(Unit : TEU)

Year	1990	1991	1992	1993	1994	1995
Total	426,045	452,682	511,465	537,064	516,669	600,137
Transit	99,817	101,832	101,833	128,474	100,527	146,402
ditto %	23.4	22.5	19.9	23.9	19.5	24.4

TABLE 3.5.24 Number of Calling Vessel

Year	1990	1991	1992	1993	1994	1995
Domestic	16,546	16,496	17,124	17,226	19,893	18,418
Overseas	4,875	4,924	5,572	5,586	5,573	5,917
Total	21,421	21,420	22,696	22,812	25,466	24,335

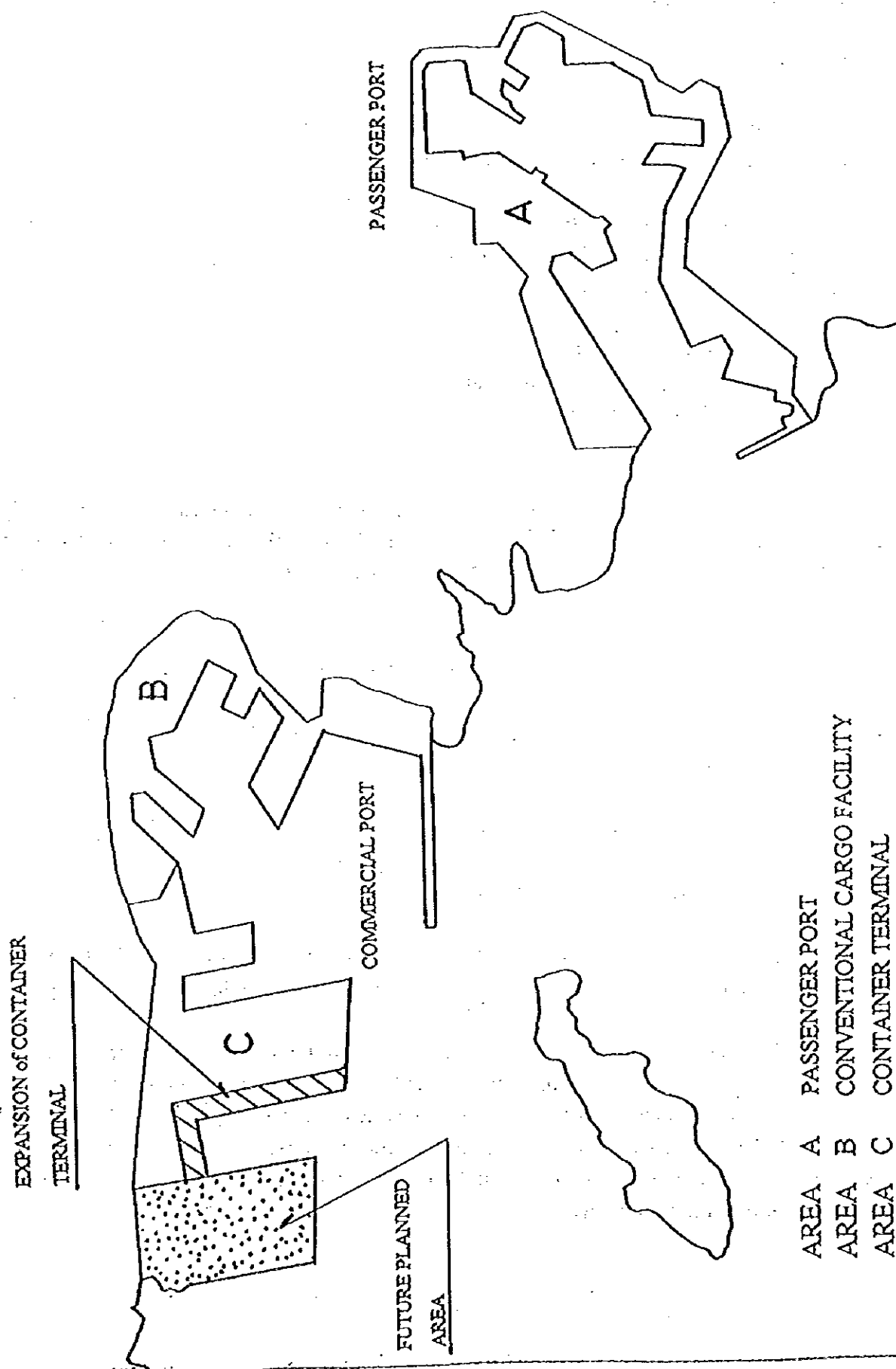
(5) Expansion Project of Container Terminal

A new container berth is under construction west of the Ikonion. Length of the new berth is 700m in the south direction and 110m in the west and maximum draught is 16.5m. New reclamation area for the container terminal is 13ha. This new container terminal project is scheduled to be completed at the end of 1998, and target container throughput volume is 1,000,000 TEU in the year 2000. Total capacity and equipment for container handling of the port after the completion of the project are as follows.

- Length of Berth 3,100m for 7 berth
- Draft of sea 16.5 m
- Container stock yard 613,000 m²
- Stock yard volume 18,500 TEU
- Post panamax gantry cranes 10 units
- 80 straddle carriers
- 64 tractors
- 28 forklift

In addition to this new container berth, extension of RO/RO quay to north-west of the passenger terminal is under construction. Extension length is 120m, and water depth is 14m.

FIGURE 3.5.10 Port of Piraeus



3.6 Rhine Danube Route

(1) General

The inland waterways network in Europe is shown in Fig. 3.6.1. It is recognized in Europe that the inland waterway systems are vital to economic development.

In 1994 approximately 425 million metric tons were transported via Europe's inland waterways. Today, in Europe, the different modes of transportation break down according to the following mix:

- 35% Road transportation
- 24% Inland waterway transportation
- 9% Railway transportation
- 32% Oceangoing transportation

Even today, the European network of long-distance highways is hopelessly overtaxed by truck traffic. Traffic jams and stop-and go traffic causing delays of four to eight hours are commonplace in bottlenecks like Frankfurt, Munich, Stuttgart, at the border to Switzerland, and in many other places.

In contrast to this, the capacity of Europe's river ways and canal systems appears to be almost unlimited. The Rhine and the German and European canal systems are capable of handling eight times as much traffic as they do today. The Main-Danube canal could handle six times as much.

There are more than 22,640 kilometers, or about 14,000 miles, of navigable river ways and canal systems in Europe. Approximately 12,000 kilometers can be navigated by ships with a load-carrying capacity of more than 1000 metric tons.

The container terminals along the Rhine and in the major centers like Frankfurt and Main are increasing their container business at a rate of more than ten percent a year.

The Main-Danube canal has a length of 110 kilometers. Linked to the Rhine, the Rhine-Main-Danube combination, with a length of more than 3,500 kilometers, has exceeded traffic expectations many times over in spite of the war in the former Yugoslavia. Instead of the planned amount of two million metric tons, this new major European waterway, which was officially opened in September 1992, is now carrying more than six and a half million tons annually.

Over the next twelve years, the focus will be on the Elbe river, on the canal systems leading to the Czech Republic and Poland, and the deepening of the Danube, at a total cost of 2.3 billion mark. The Czech republic is planning a connection between the Danube and the Moldova. The European association of inland ports has requested that a link-up of the Danube to the Elbe and Oder rivers be included in the project list.

For economic and ecological reasons, Europe must affect a change in the distribution of freight among the modes of transportation. It is said that they find the external costs in freight transportation to be quite different depending on which mode is used :

Truck	DM 5.01 per 100 metric tons per kilometer
Rail	DM 1.15 per 100 t/km
Inland waterway	DM 0.35 per 100 t/km

(2) Main - Danube Canal

As part of the 677 km long Main-Danube waterway from Aschaffenburg to Passau, the 171 km long Main-Danube Canal between Hamberg on the Main and Kelheim on the Danube overcomes, by ascent and descent, a total difference in head of 243m. The Canal from Nuremberg overcomes the summit level at an altitude of 406 m above mean sea level with 4 barrages, 3 of them with a difference of 25m in elevation. Figure 3.6.3 and Figure 3.6.4 show the Main-Danube Canal.

The dimensions for 2 standard canal cross-sections were stipulated for a standard ship of 80 m in length, 9.5 m in width, 2.5 m in draught, and 1,350 t in deadweight (European ship). These cross-sections allow the standard ship to travel under full load at a speed of 11 km/h, ensuring safe and economical navigation.(See Figure 3.6.5)

The Canal is navigable by cargo motor ships of up to 2,000 D/W, and twin-barge pusher-tug assemblies of up to 3,300 D/W. Dimension of European ship and barge pusher-tug assembly is shown in Figure 3.6.6.

FIGURE 3.6.1 European Inland waterways Network

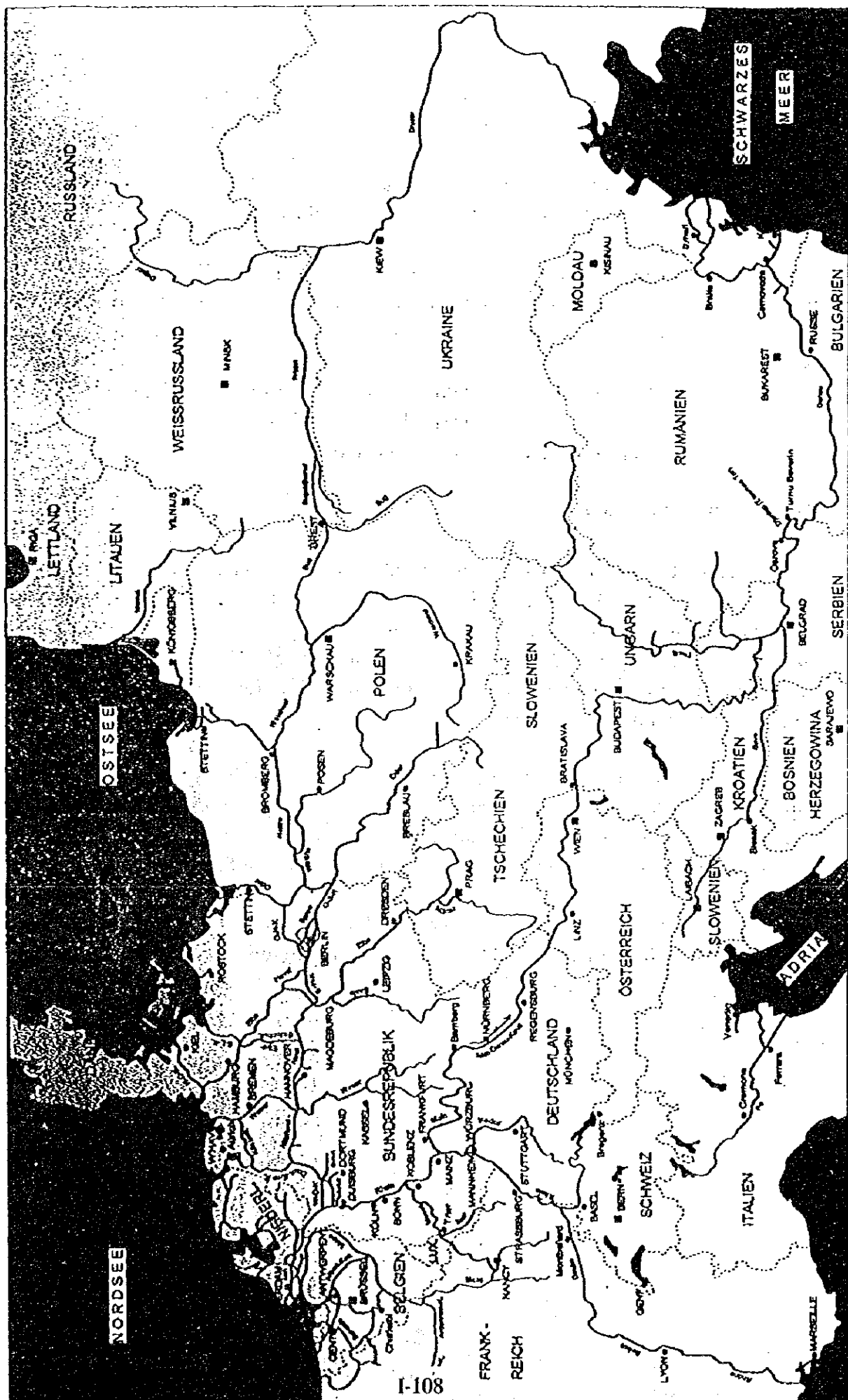


FIGURE 3.6.2 Cargo Volume of Main Inland Waterways in 1993

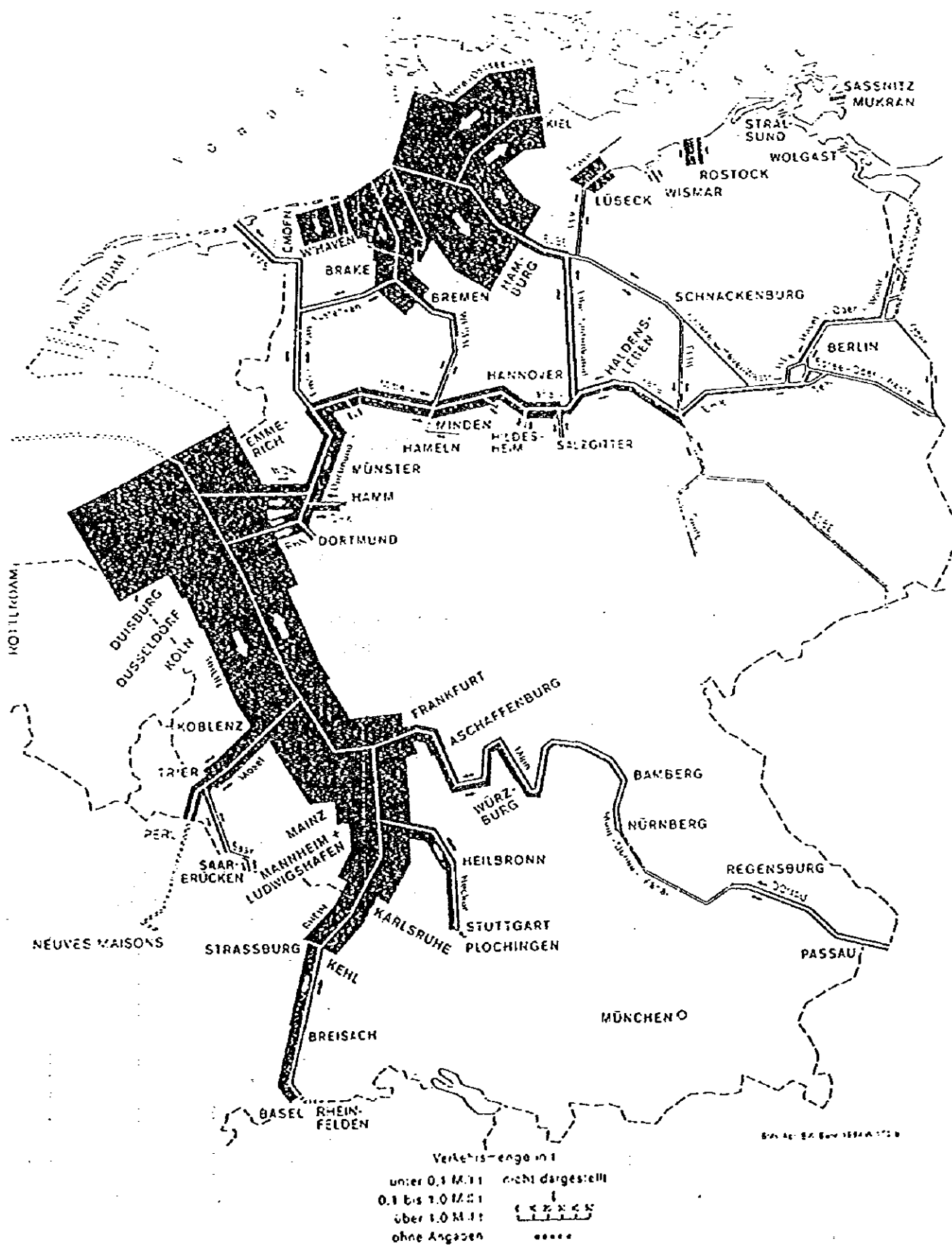


FIGURE 3.6.5 Standard cross-sections of the Main-Danube Canal

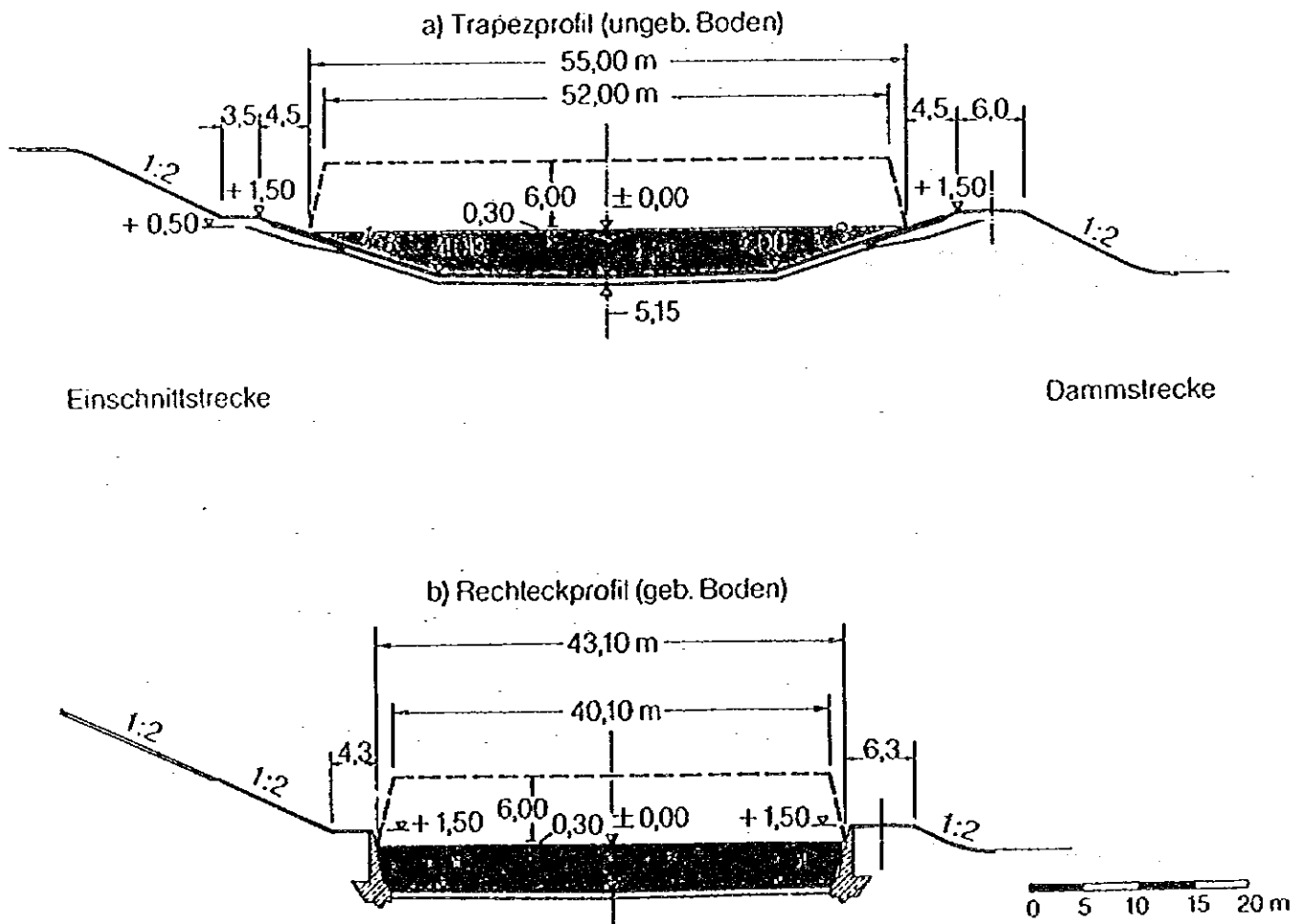
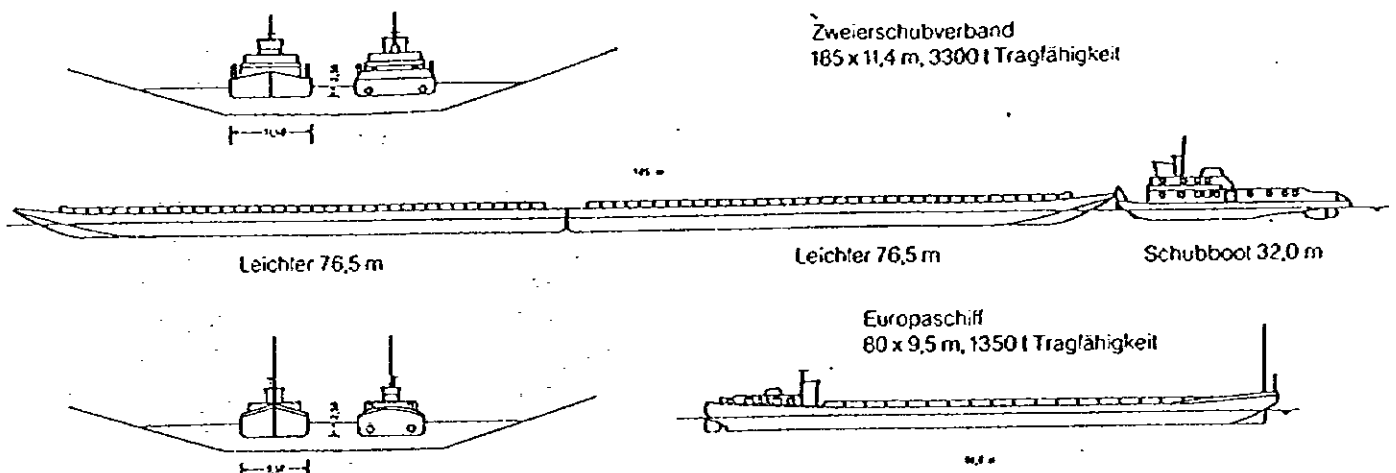


FIGURE 3.6.6 Dimensions of Europe ship and barge pusher-tug assembly



(3) The Danube

Hydrographic conditions are shown in Figure 3.6.7. Figure 3.6.8 presents a graph relating to depths recorded on this shipping channel. The water level has not fallen below the minimum level of 1.2 meters even in 1989 when rainfall was lower than the preceding years. Compared with other waterways (e.g. Rhine, Elbe) the Danube is more suitable for navigation and has less natural barriers. The most important problem regarding navigation is seen in the section between Wien and Budapest due to minimum water level. Therefore, consideration should be given to raising water levels in the medium-term.

The most common type of barge in the Danube region is "Danube Europe II b (L: 76.5m; W: 11.0m; H: 3.1m; D: 2.8m). Other barges have widths varying between 8 and 15 meters.

Fleet units sailing on the Upper Danube usually consist of quadruplet fleets (Vessel+2+2) with a total carrying capacity of approximately 6,000 tons. Fleets with up to 12 barges with a total carrying capacity of 20,000 tons are permitted to sail on the Central and Lower Danube. However a connection change is required since neither 3 (Vessel+3+3+3) nor 4 (Vessel+4+4+4) fleets with 12 barges can completely pass through the gate at river-km 942 and river-km 863. 3+3+3+3 barge system can only pass through the gate after being disconnected from the vessel. Therefore, vessels prefer vessel+3+3+3 combination instead of vessel+2+3+3 combination. The former combination can only be possible with a swallow-tail configuration where gate width/size is to be completely used.

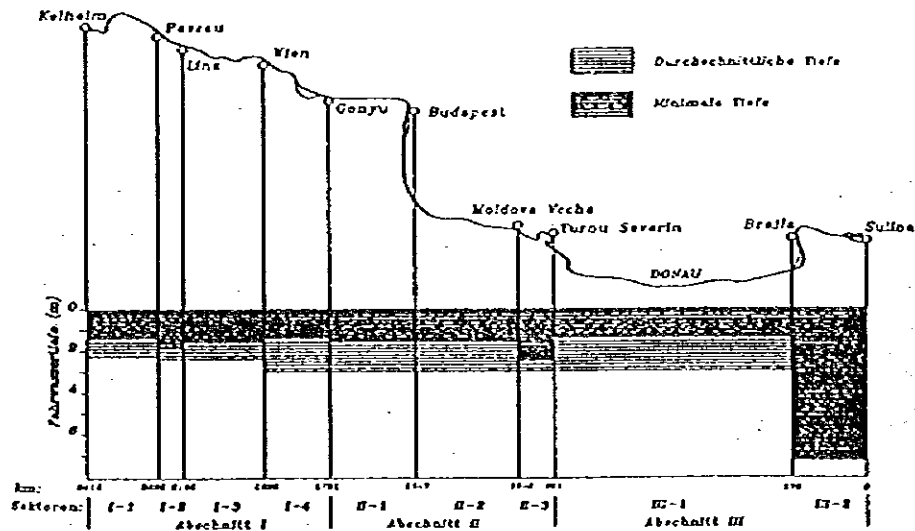
According to findings of the Danube Commission, the Danube was used by vessels with a draft of 3.5 m over the past 20 years .

Table 3.6.1 presents cargo transportation between Germany and countries bordering Danube in 1988, and 1989 via Danube.

TABLE 3.6.1 Cargo transfers between Germany and other Danube Countries via Danube in 1988 and 1989

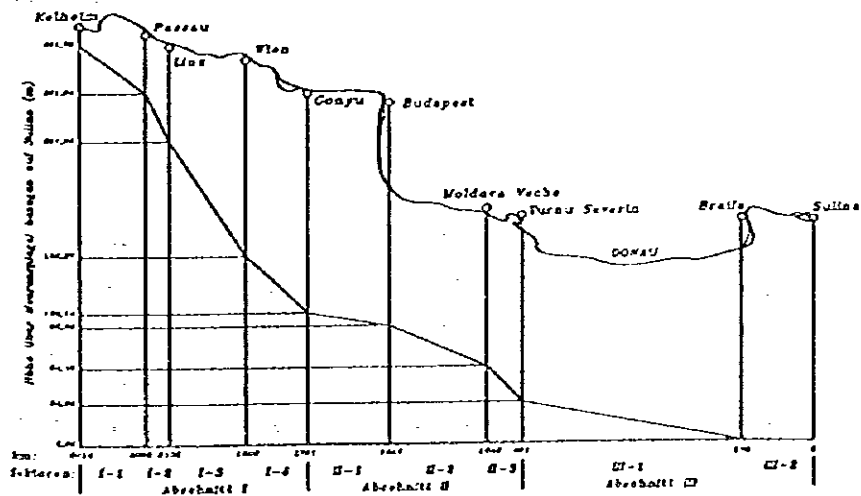
Country	Quantity of Cargo transported (in Ton)	
	1988	1989
Austria	1,293,760	1,264,145
Czechoslovakia	31,250	21,370
Hungary	412,985	477,113
Yugoslavia	410,552	462,918
Bulgaria	158,996	145,310
Romania	210,032	256,766
CIS	29,296	46,793

FIGURE 3.6.7 Geographical table and height from NN



ENR : Navigable and regularization level

FIGURE 3.6.8 Average and minimum shipping channel depth at ENR in 1990.



4. Ports of Turkey

4.1 Location and Utilization

4.1.1 Location

Turkey is located in between Europe and Asia. Coastal areas face the Black Sea, the Mediterranean Sea, the Aegean Sea and the Sea of Marmara; the country borders Iran, Iraqi, Syria and C.I.S. countries to the east and Bulgaria and Greece to the north and west. Historically, ports at these coastal areas have prospered as international trade centers in Turkey. It is expected that the hinterlands of Turkey's ports will expand to the Baltic Sea, because of completion of the Rhein Main and Danube Canal.

There are approximately 180 ports and port facilities along Turkey's 8,333km coastline. Out of these, 24 are major ports related to the Ministry of Transport, 10 are yacht harbors certified by the tourism administration and 124 are fishing ports. It is said that ports in Turkey have 120 million ton/year cargo handling capacity, with wharves and vessel approach locations exceeding 33 km in length. Furthermore, there are oil and oil product plants with 160 million ton/year loading and unloading capacity.

Major ports are shown in Figure 4.1.1. Ports in Turkey are divided into four groups, according to the Sea in which they face, as follows;

A : Ports on the south east coast of the Black Sea

Samsun, Rize, Trabzon, Hopa are large ports located in this region. These ports have roles as centers of physical distribution from eastern Europe and the former Soviet Union to the Middle East. Cargo is unloaded at the ports and transported to the south through eastern Turkey by land transportation. The ports are expected to play an important role as distribution centers combined with railway and road network, especially as economic development in C.I.S. countries progresses.

It is said that these ports are used at a rate of 22%, with a total of 10 million tons of vacant/inactive capacity. On the other hand, due to political changes throughout the world and the breaking up of the former USSR, it's expected that Turkey's Black Sea ports shall face an unexpected amount of cargo traffic compared with previous years as a result of the Black Sea becoming a passage way for cargo directed to Europe due to the Rhine-Danube connection.

B : Ports on the coast of the Mediterranean Sea

The Antalya, Mersin and Iskenderun Ports are located in the Mediterranean Region. These ports are important as the main front gate of trade in south-eastern Anatolia, and are basic infrastructure to support the GAP plan which is being positively promoted by the Turkish Government as a basis of economic development of South-East Anatolia. The ports are also physical distribution centers from Syria to inland through land transportation.

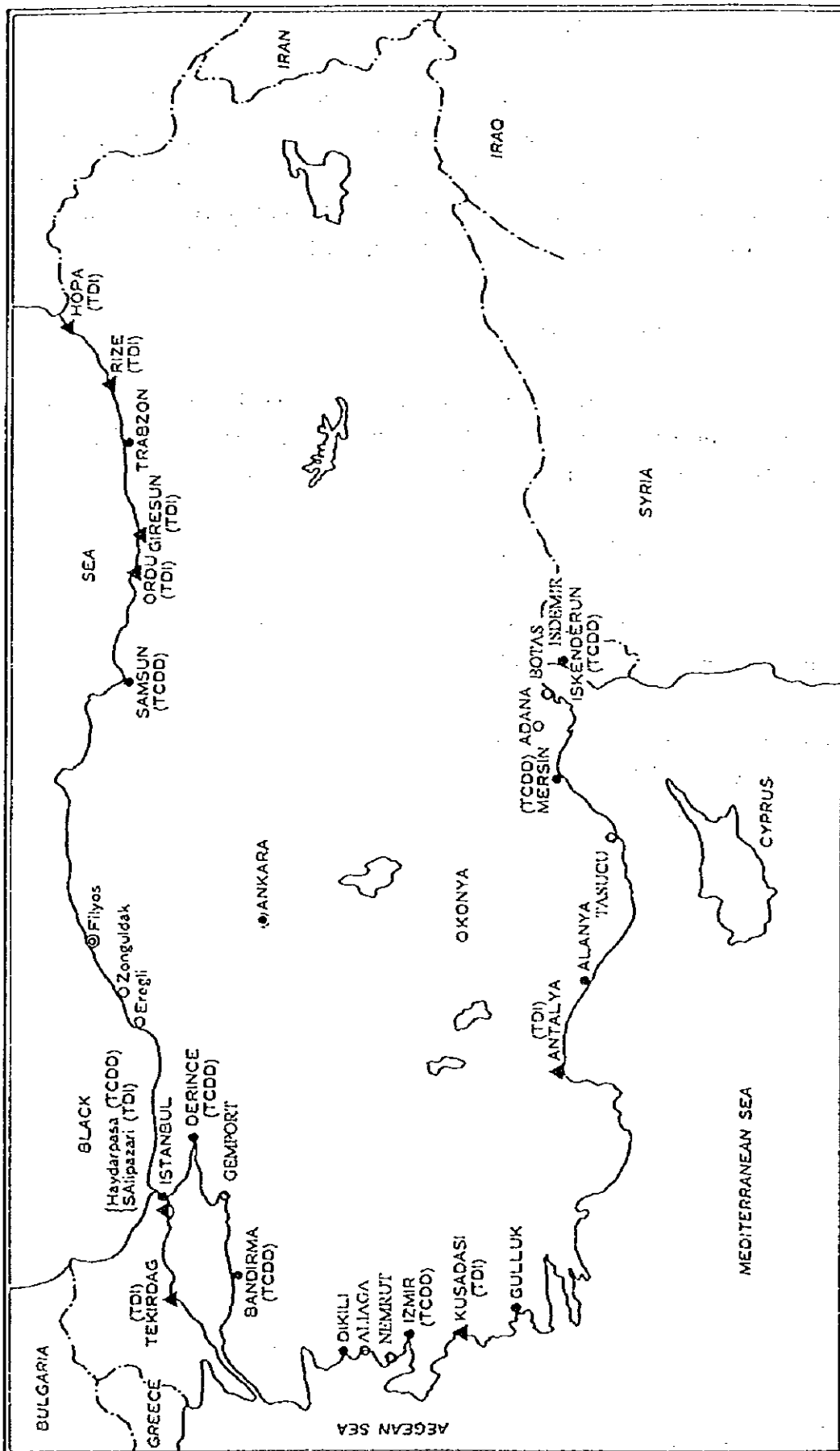
C : Ports on the coast of the Aegean Sea

The Izmir port is the only port with an exit passage in the Western Anatolian hinterland and it is said the port has a capacity of 3.2 million ton/year. The port is a center for the trade between the ports in western Europe and northern Africa, through the Aegean Sea.

D : Ports on the coast of the sea of Marmara

Haydarpasa, Derince and Bandirma are large ports in this district. Furthermore, loading-unloading services are also provided from Tekirdag and Mudanya ports.

In recent years, these ports became centers of trade between east and west, namely, between the Middle East and Eastern Europe and physical distribution centers to support commercial and industrial areas around the Sea. Moreover, the ports are centers for passengers crossing the Sea and for foreign passenger vessels going to the Aegean Sea and the Mediterranean Sea.



● : TCDD port
▲ : TDI port

FIGURE 4.1.1 Location of major ports in Turkey

4.1.2 Cargo

(1) Share by Transportation Modes in Total Volume of Foreign Trade

Turkey has 7 land bordered countries, therefore highway transportation has been also developed, but sea transportation occupies an approx. 90 % share of foreign trade in volume. Share of railway and highway transportation in cargo volume has been decreasing, on the other hand, cargo volume transported by air and sea mode is increasing. Historical trend of share of Transport system in total volume of foreign trade is shown in Table 4.1.1

TABLE 4.1.1 Share of Transport System in Total Volume of Foreign Trade

Year	1989	1990	1991	1992	1993	1994	1995
Routes	%	%	%	%	%	%	%
Sea ways	87.6	87.7	89.6	88.4	91.8	92.1	91.4
Railways	1.4	0.9	1.2	1	0.7	0.5	0.8
Highways	10.9	11.3	9.1	8.6	6.8	7.2	7.6
Airways	0.1	0.1	0.1	0.7	0.7	0.2	0.2
Pipeline				1.3			
Total	100	100	100	100	100	100	100

Source: Chamber of Shipping

(2) Total Cargo Handling Volume of Turkey by Sea

Historical trend of total cargo volume by sea is shown in Table 4.1.2. and Figure 4.1.1. The foreign trade volume by sea was 84 million tons in 1995. Unloading cargo has been increasing except for 1994, however loading cargo volume has stagnated. The share of Turkish flag vessel in foreign trade was 42 % in 1995. Turkish ports handling cargo volume by commodity in 1987 and 1995 are shown in Table 4.1.3. The majority of trade goods are oil/oil products, Iron ore/ coal mineral, industrial products, etc. The major trading partners are located in continental Europe, the Middle East, the Mediterranean Sea, the Mesopotamia/Red Sea, and North America. Historical trend of foreign trade by country group is shown in Table 4.1.4.

In 1991, due the embargo on Iraq crude oil, total cargo handling volume decreased greatly. In 1989, transit crude oil volume was approx. 76 million tons. Export and import cargo volumes increased between 1987 and 1995 by 56 % and 80 % respectively. On the other hand, loading and unloading domestic cargo volumes decreased by 28 % and 25 % respectively.

TABLE 4.1.2 Trend of Total Cargo Handling Volume of Turkey 1987 - 1995

Year	Loading			Unloading			TOTAL	unit. ton
	Domestic	Export	Transit	Total	Domestic	Import	Transit	Total
1987	21,353,499	12,941,086	54,868,145	89,162,730	25,393,977	35,587,595	945,362	61,926,934
1988	23,777,525	19,707,519	72,480,213	115,965,257	29,076,049	32,810,248	1,049,739	62,936,036
1989	25,991,833	15,367,500	76,817,006	118,176,339	30,834,522	33,669,862	999,117	65,503,501
1990	20,472,464	15,238,654	41,714,047	77,425,165	26,641,339	43,878,433	1,236,159	71,755,931
1991	14,077,838	20,343,438	1,510	34,422,786	18,330,929	49,991,699	972,338	69,194,966
1992	15,105,030	21,915,110	156,664	37,176,804	19,136,796	50,245,252	873,457	70,255,505
1993	15,373,878	18,102,360	99,938	33,576,176	20,869,786	64,875,177	370,944	86,115,907
1994	15,357,566	22,112,827	43,153	37,513,546	18,646,496	52,630,788	143,801	71,421,085
1995	15,427,317	20,174,562	133,425	35,735,304	19,108,136	64,006,554	181,168	83,295,858
								151,089,664
								178,901,293
								183,679,840
								149,181,096
								103,617,752
								107,432,309
								119,692,083
								108,934,631
								119,031,162

Source: Undersecretariat Maritime Affairs

FIGURE 4.1.2 Trend of Cargo Volume of Turkey

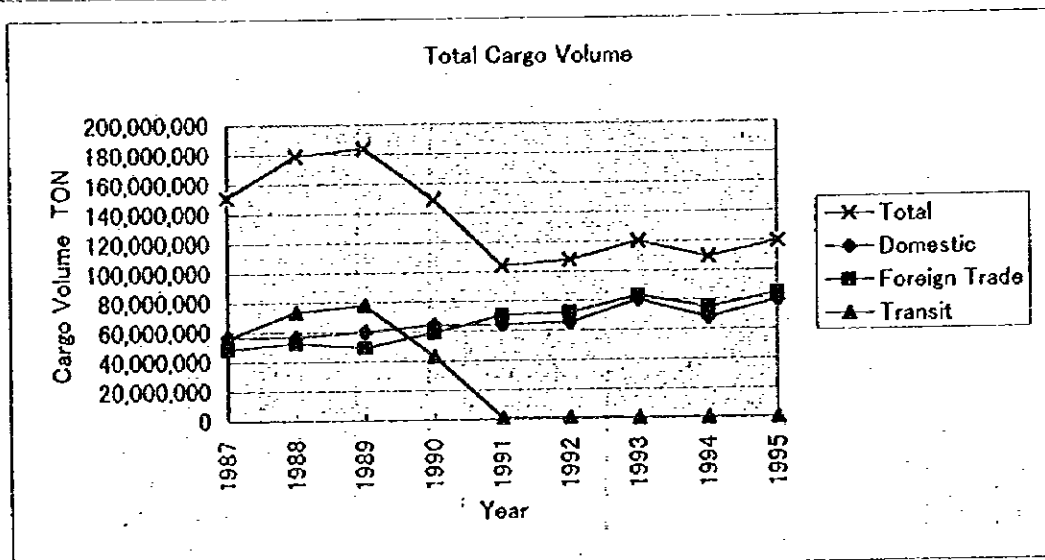
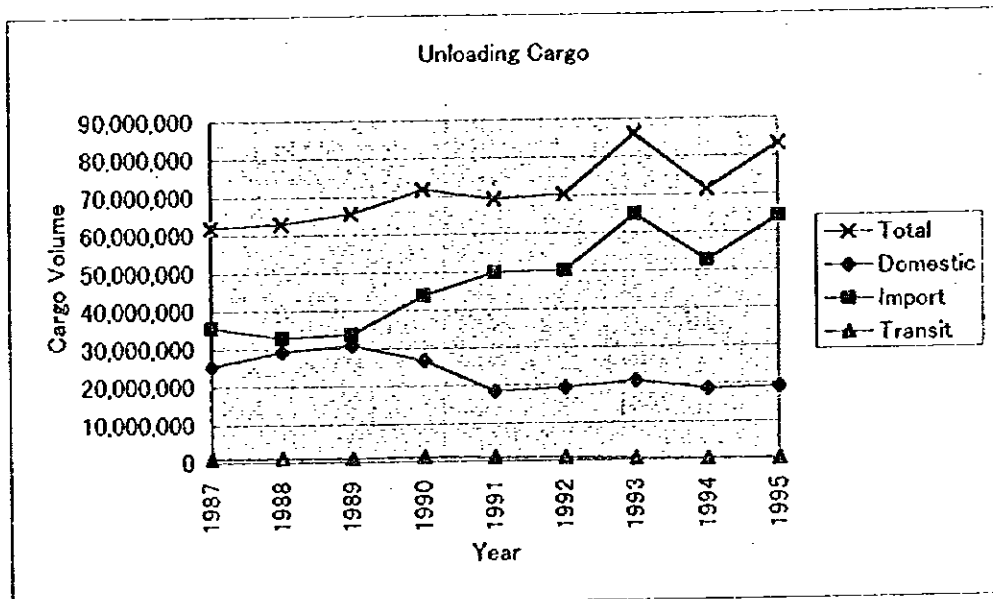
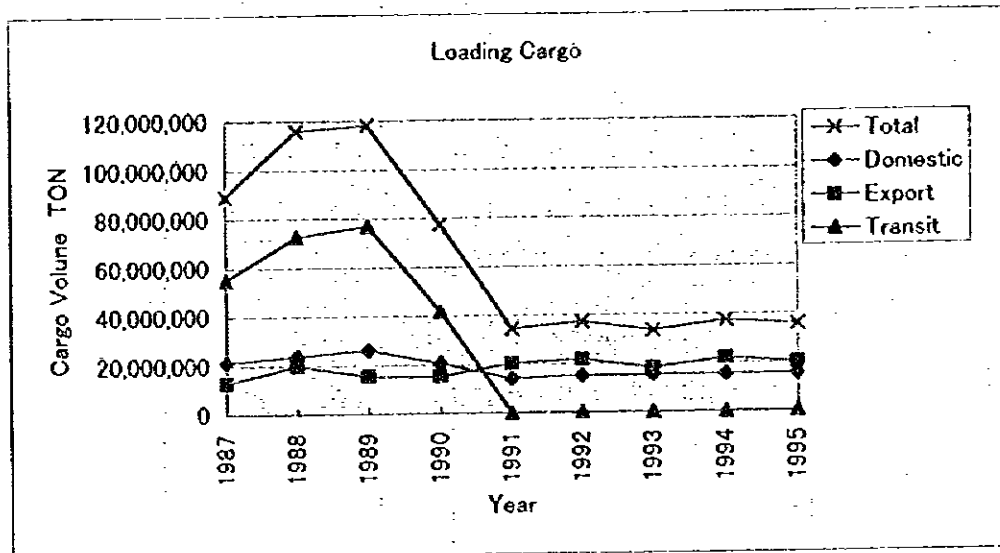


TABLE 4.1.3 Turkish ports cargo handling volume by Commodity

Year 1987

Year 1987		loading			unloading			TOTAL	
type of cargo	domestic	export	transit	total	domestic	import	transit	total	
solid bulk	grain	186,225	317,558	10,300	514,083	337,331	491,361	113,490	942,182
	iron ore	1,234,723	2,051,118	0	3,285,841	1,208,003	1,999,210	2,200	3,209,413
	coal	1,538,540	17,355	0	1,555,895	1,527,962	4,232,178	0	5,760,140
	total	2,959,488	2,386,031	10,300	5,355,819	3,073,296	6,722,749	115,690	9,911,735
liquid bulk	crude oil	9,089,185	1,160,300	51,747,825	61,997,310	10,008,638	11,015,356	0	21,023,994
	oil production	7,038,393	2,952,620	3,005,124	12,996,137	4,539,631	1,135,763	4,820	5,680,214
	liquid gas	237,671	8,700	8,710	255,081	269,119	653,611	0	922,730
	other liquid	121,608	223,046	24,694	369,348	685,708	2,486,174	25,878	3,197,760
total	16,486,857	4,344,666	54,786,353	75,617,876	15,503,096	15,290,904	30,698	30,824,698	
general cargo	industrial product	1,149,412	3,625,527	9,003	4,783,942	1,317,935	7,126,117	316,184	8,760,236
	agricultural product	47,058	1,316,978	8,010	1,372,046	85,445	744,055	204,252	1,033,752
	other cargo	639,753	1,227,157	54,479	1,921,389	5,350,714	4,621,336	258,949	10,230,999
	total	1,836,223	6,169,662	71,492	8,077,377	6,754,094	12,491,508	779,385	20,024,987
timber	70,931	40,727	0	111,658	63,491	1,082,434	19,589	1,165,514	1,277,172
TOTAL	21,353,499	12,941,086	54,868,145	89,162,730	25,393,977	35,587,595	945,362	61,926,934	151,089,664
Container (TEU)	508	28,026	6,851	35,385	49	20,374	14,582	35,005	70,390
Number of Vehicles	68,982	30,266	58	99,306	68,509	29,021	451	97,981	197,287
Number of Passenger	689,487	540,774	12,366	1,242,627	708,903	562,908	12,402	1,284,213	2,526,840
Number of large live stock	489	156,003	9,000	165,003	489		25,488	109,273	109,762
Number of small live stock								127,072	292,075

Source: Undersecretariat Maritime Affairs

Year 1995

ton

type of cargo	loading				unloading				TOTAL
	domestic	export	transit	total	domestic	import	transit	total	
solid bulk	grain	50,910	1,081,142	1,863	1,133,915	89,624	2,589,716	20,546	3,833,801
	iron ore	763,116	3,664,702	7,648	4,435,466	786,813	3,884,339	7,648	9,114,266
	coal	610,513	14,012	0	624,525	637,376	7,600,891	0	8,862,792
	total	1,424,539	4,759,856	9,511	6,193,906	1,513,813	14,074,946	28,194	21,810,859
liquid bulk	crude oil	1,719,300	0	0	1,719,300	1,756,090	21,768,510	0	25,243,900
	oil production	8,703,942	2,440,128	39,169	11,183,239	8,621,011	3,680,702	41,952	23,526,904
	liquid gas	290,530	68,380	0	358,910	289,854	2,484,624	0	3,133,388
	other liquid	25,914	211,071	0	236,985	56,173	1,385,061	154	1,678,373
	total	10,739,686	2,719,579	39,169	13,498,434	10,723,128	29,318,897	42,106	53,582,565
general cargo	industrial product	2,457,042	11,540,428	78,531	14,076,001	2,252,065	18,374,583	87,229	34,789,878
	agricultural product	3,656	282,573	705	286,934	2,365	423,566	0	712,865
	other cargo	788,292	812,062	5,509	1,605,863	4,594,989	1,152,407	23,639	7,376,898
	total	3,248,990	12,635,063	84,745	15,968,798	6,849,419	19,950,556	110,868	42,879,641
timber	14,102	60,064	0	74,166	21,776	662,155	0	683,931	758,097
TOTAL	15,427,317	20,174,562	133,425	35,735,304	19,108,136	64,006,554	181,168	83,295,858	119,031,162
Container (TEU)	3,532	289,022	5,380	297,934	4,624	276,138	6,290	287,052	584,986
Number of Vehicles	35,359	115,746	3,380	154,485	33,266	144,764	3,005	181,035	335,520
Number of Passenger	402,977	544,211	383,943	1,331,131	391,473	692,446	286,818	1,370,737	2,701,868
Number of large live stock	1,200	1,703		2,903	425	225,081		225,506	228,409
Number of small live stock		710,518		710,518		154,506		154,506	865,024

Source: Undersecretariat Maritime Affairs

TABLE 4.1.4 Foreign Trade by Country Group 1989-1994

Thousand Dollars

Country Groups		1988	1990	1991	1992	1993	1994
European Community	import	6,462,968	9,897,512	9,896,056	10,656,531	13,873,315	10,915,178
	export	5,656,841	7,177,018	7,347,158	7,933,893	7,597,484	8,635,376
European free trade association	import	493,314	597,085	540,738	791,107	727,096	562,657
	export	201,058	333,378	285,841	298,429	247,724	276,894
Other OECD	import	2,956,868	3,730,603	3,634,202	3,975,845	5,373,417	3,834,380
	export	1,317,114	1,299,502	1,223,541	1,113,712	1,221,295	1,828,083
OECD TOTAL	import	9,913,150	14,225,200	14,070,996	15,423,483	19,973,828	15,312,215
	export	7,175,013	8,809,898	8,856,540	9,346,034	9,066,503	10,740,353
European	import	1,534,842	2,243,741	2,031,430	2,226,229	3,355,035	2,589,907
	export	1,164,838	1,157,974	1,283,531	1,475,348	1,956,100	2,437,032
African	import	1,048,246	1,337,490	749,864	807,536	715,857	860,749
	export	767,334	748,406	809,731	782,034	706,281	842,668
American	import	443,923	552,395	439,232	414,250	544,645	356,590
	export	44,243	45,316	71,876	67,620	91,313	134,363
Middle East	import	2,301,797	2,705,105	2,483,106	2,647,698	2,798,320	2,529,498
	export	1,976,890	1,602,774	1,787,467	1,908,219	1,887,554	2,050,305
Other Asian	import	549,833	1,236,615	1,270,827	1,320,338	1,958,495	1,290,924
	export	491,518	567,548	758,224	1,047,532	1,485,657	1,504,574
Others	import	352	1,580	1,558	31,521	82,189	330,136
	export	4,856	27,371	26,092	87,843	151,660	396,576
Non OECD TOTAL	import	5,878,993	8,076,926	6,976,017	7,447,572	9,454,541	7,957,804
	export	4,449,679	4,149,389	4,736,921	5,368,596	6,278,565	7,365,518
GENERAL TOTAL	import	15,792,143	22,302,126	21,047,013	22,871,055	29,428,369	23,270,019
	export	11,624,692	12,959,287	13,593,461	14,714,630	15,345,068	18,105,871

Source: SIS 1994 Foreign Trade Statistics

4.2 Management and Operation

4.2.1 Port Administration System

(1) Port Management Body

Turkey has approx. 260 shore facilities including ports & piers, yacht harbors and fishing ports. These facilities are operated by various institutions as follows:

17 ports and piers	: Turkish Maritime Organization (TDI)
7 ports	: Turkish State Railways (TCDD)
15 ports and piers	: municipalities
4 port and piers	: provincial peculiar administrations
2 ports	: Turkish Iron and Steel Organization (TDCI)
1 port	: Turkish Coal Institution (TTK)
3 ports	: private sectors(Gemport, Altas, Yazici)
10 yacht harbors	: The Tourism Bank, municipalities
124 fishing ports	: cooperatives, municipalities and provincial peculiar administrations
other piers	: public administrations and the private sector

Among these facilities, ports including piers are divided into two groups, i.e. general-purpose ports and specialized ports. Major ports of each group are as follows:

- Major General-purpose Ports

Hopa	TDI
Trabzon	TDI
Samsun	TCDD
Giresun	TDI
Rize	TDI
Haydarpasa	TCDD
Derince	TCDD
Gemport	Gemlik Port and Warehousing Administration Co. Inc.
Bandirma	TCDD
Tekirdag	TDI
Izmir	TCDD
Antalya	TDI

Mersin	TCDD
Iskenderun	TCDD
Yazici	Yasici Demir Celik San. Ve Tic. A.S.
- Major Specialized Ports	
Zonguldak	TTK
Eregli	Eregli Iron Steel Factories (ERDEMIR)
Aliaga	Turkish Petroleum Corporation (TPAO)
Nemrut	Turkish Petrochemical Corporation (PETKIM)
Tasucu	Cellulose and Paper Corporation (SEKA)
Botas	Turkish Pipeline Corporation (BOTAS)
Isdemir	Iskenderun Iron Steel Factories (ISDEMIR)

From the administrative point of view, Turkish ports including piers are divided into two groups, i.e. public and private ports.

Port management of public ports is carried out by either state economic enterprises, provincial peculiar administrations, municipalities, state industrial enterprises or semi-public sectors.

With the exception of Gemport and Yazici Port, which are operated by the private sector, major general-purpose ports listed above are operated by two state economic enterprises, i.e. Turkish State Railways (TCDD) and Turkish Maritime Organization (TDI). Ports connected with the railway network are operated by TCDD and other ports are operated by TDI. These major public ports for general-purpose are under the control of the Ministry of Transportation which approves the budgets and annual programs of TCDD and TDI.

Major specialized ports are operated by either state industrial enterprises such as PETKIM and TPAO or semi-public sectors such as ERDEMIR and ISDEMIR. These ports are under the control of the Ministry of Industry and are mostly confined in purpose to the particular needs of industrial concerns.

Municipal ports are comparatively small and limited to a small volume of coastal traffic serving the local needs of provincial towns.

The second group is composed of private ports. These ports are constructed and managed by private sectors after getting permission from the central government.

(2) Port-related Organizations

In addition to above mentioned port management bodies, many organizations take part in the implementation of port projects. The role of each organization in the project implementation is outlined as follows:

- The State Planning Organization (SPO) considers the total balance of investment in Turkey and judges the feasibility of specific projects.
- The Ministry of Transportation coordinates all the development of ports in Turkey
- The General Directorate for Construction of Railways, Ports and Airports (DLH) formulates development plan for public ports and carries out the implementation.
- State economic enterprises, such as TCDD and TDI propose the necessary improvements for their ports.
- State industrial enterprises such as PETKIM and TPAO and private port management bodies make development or improvement plans and construct their berths, handling machines and backup facilities.
- Municipalities or governmental organizations which do not have planning and technological sections request the DLH to construct their ports.

The function and responsibilities of main port-related organizations are summarized as follows:

1) Undersecretariat for Maritime Affairs

- To coordinate marine trade according to national policy
- To coordinate political, economical and legal subjects concerned with international marine work
- To coordinate organizations and state enterprises interested in marine works according to national marine policy and strategy
- To undertake development studies on ports, harbours and piers which provide technical, social and economic benefits for the national economy
- To organize all marine works and undertake the dredging studies of all ports by investigating the working situations of ports and piers under operation or to be operated.

2) DLH

This directorate undertakes all planning, construction and maintenance works

belonging to the semi-public sector (KIT) and the public-capital autonomous sectors (IDT). For major projects, the required studies are undertaken by universities or institutes, while private ports are developed by private enterprises. The DLH only approves their projects and controls all the construction works. The main responsibilities of the DLH are listed as follows:

- To conduct research and prepare for public port projects
- To construct and maintain public ports, harbours and shore protection structures and their required facilities
- To provide national standards for taking precautions and controlling the projects prepared by public institutions, state enterprises, municipalities and private enterprises, etc.
- To approve the above-mentioned projects and control their construction works

3) State Economic Enterprises

As mentioned in chapter 4.2.1 (1), major public ports for general-purpose are operated by two state economic enterprises such as TCDD and TDI. These enterprises are managed by a Board of Directors consisting of five members, each appointed by the cabinet. The General Director, chief executive of the organization, is the chairman of the Board. In the headquarters of both organizations, there is a separate Department of Ports which is responsible for the management, overall planning, functioning of the ports and their coordination. Each individual port is managed by a Port Manager appointed by the related General Directorate. Generally all the services to ship and cargo in their ports are given by each port directorate and by their own labour and equipment. The organization chart of TCDD and TDI is shown in Figure 4.2.1 and 4.2.2 respectively. The main responsibilities of each organization are listed as follows:

a) TCDD

- To operate, develop and renew ports, quays and piers
- To provide miscellaneous transportation connecting ships with railways
- To operate and establish the required superstructural facilities (e.g. warehouses, silos, fuel oil tanks, etc.)

b) TDI

- To undertake loading and unloading operations with the exception of the case of Port of Tekirdag, Gulluk and Dikili. (In these three ports there are private companies for

stevedoring.)

- To provide some services for ships (e.g. water supply and bunkering, etc.)
- To operate and establish the required superstructural facilities

**FIGURE 4.2.1 Organization Chart of Ports Department
in General Directorate of TCDD**

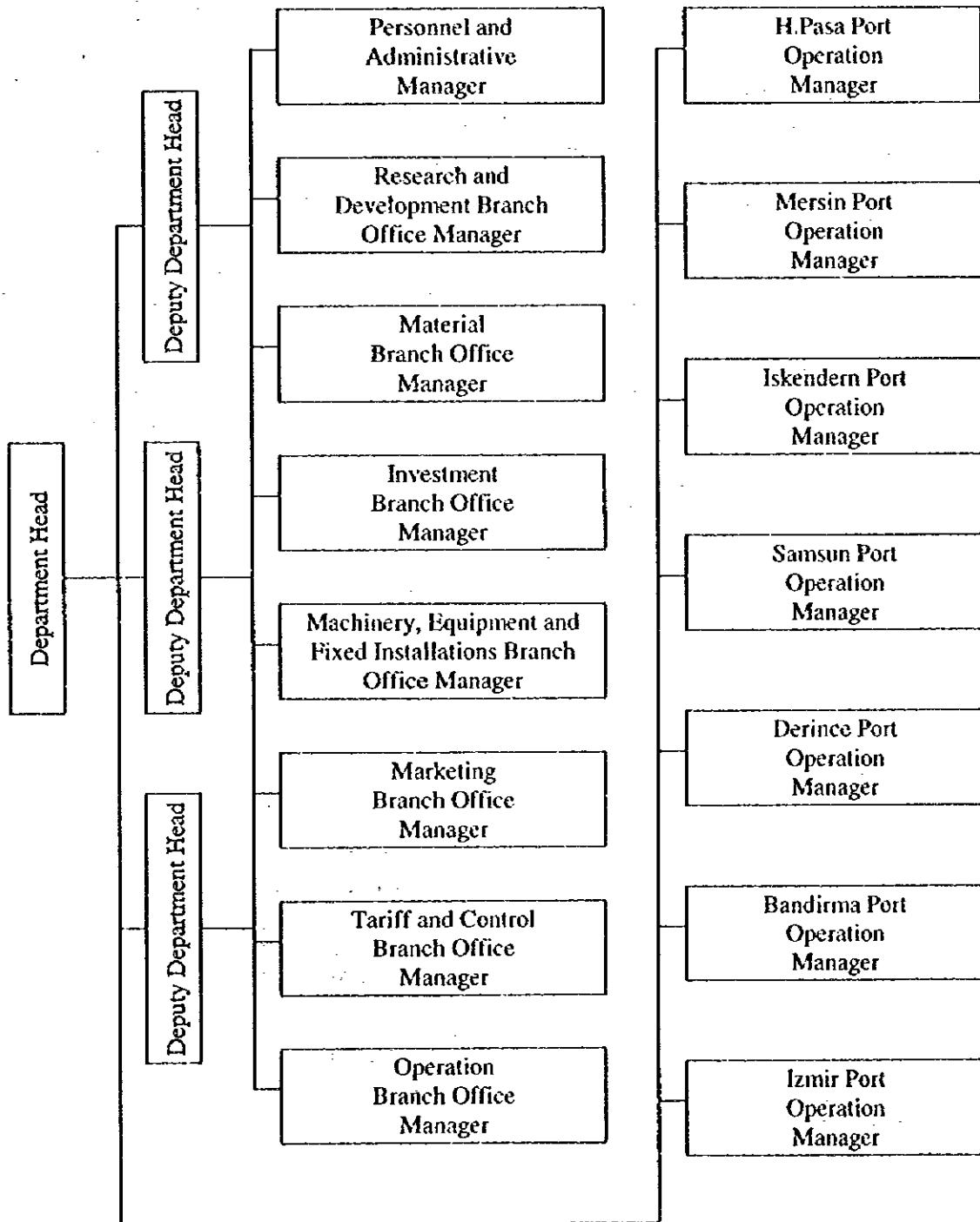
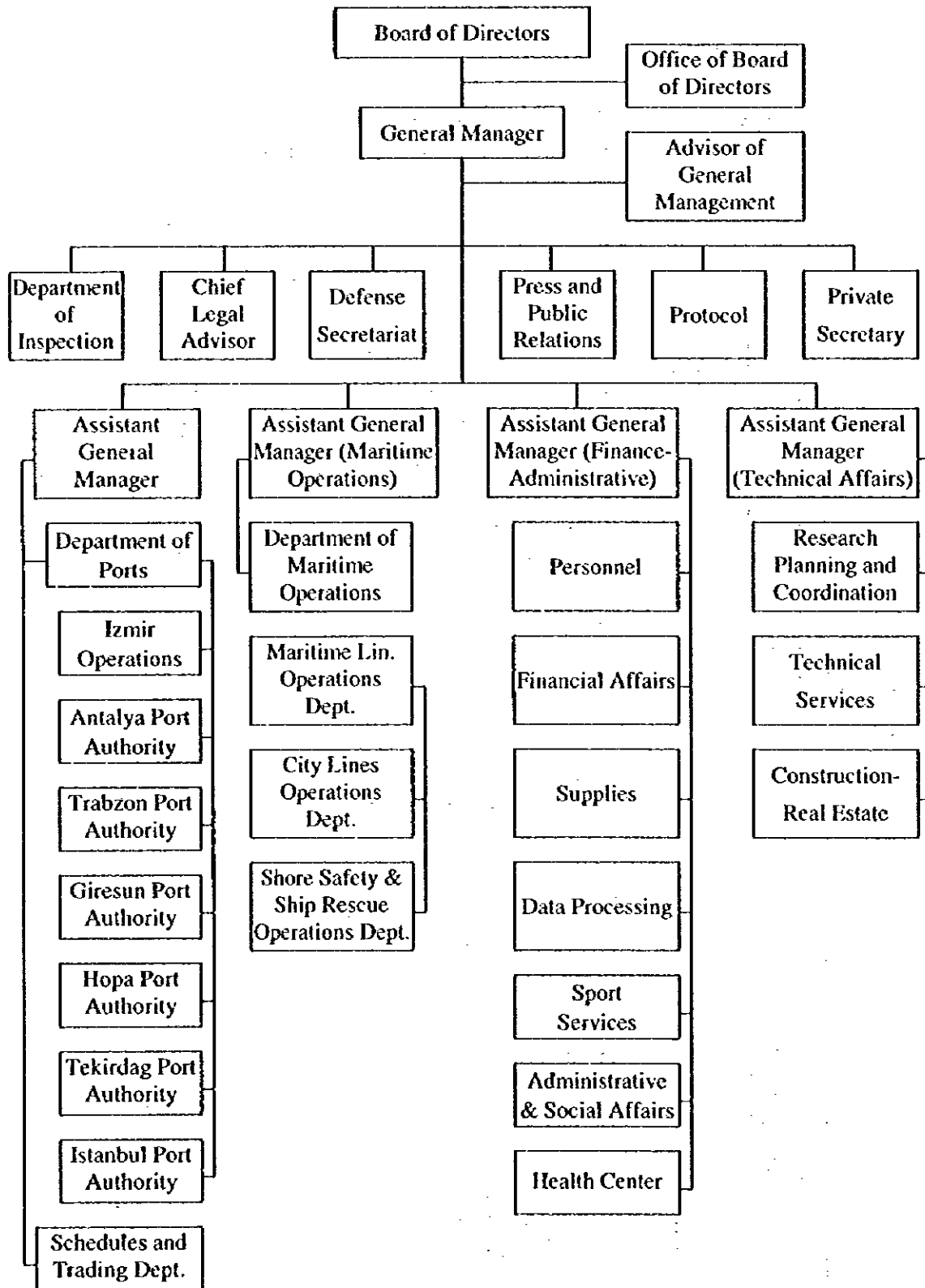


FIGURE 4.2.2 Organization Chart of TDI



4.2.2 Present Situation of Port Management and Operation

Port management and operation system differs by each port. However in order to evaluate the systems of the existing ports and establish a new system for the new port, we adopt mainly Haydarpasa Port as a typical example of a Turkish public port, referring to other ports as necessary.

(1) Port Management

1) Organization

The organization chart of ports operated by TCDD is shown in Figure 4.2.3. Each port is headed by Port Operating Manager and below him there are two Assistant Managers, Protection and Safety Manager, Civil Defense Expert and Physician Office. However, decision and controlling the policies of port management and operation are executed by the Board of Directors mentioned in chapter 4.2.1 (2) 3).

2) Personnel

Number of staff and workers in major Turkish ports is shown in Table 4.2.2. Breakdown of number of workers in major TCDD ports around the Marmara Sea is shown in Table 4.2.1. These figures include permanent, temporary and casual workers.

TABLE 4.2.1 Breakdown Number of Workers in Major Ports around Marmara Sea

	HAYDARPASA	DERINCE	BANDIRMA	IZMIR
Loading/unloading workers	259	54	43	198
Mechanical vehicle operators	83	32	26	30
Workshop workers	90	57	53	57
Ship personnel	93	49	58	18
Non-qualified workers	19	14	15	24
Total	544	206	195	327

Source: TCDD

TABLE 4.2.2 Number of Staff and Workers in Major Turkish Ports

	H.Pasa	Izmir	Derince	Mersin	Bandirma	Samsun	Iskenderun	TCDD Ports Total	Gemport	Kumport
Executives	3	4	3	4	3	2	2	21	1	1
General Affairs Dept.										
Executives	1	1	1	1	1	1	1	7		
Officials	12	26	14	23	9	20	16	120		1
Sub-total	13	27	15	24	10	21	17	127	0	1
Workers								0		
Total	13	27	15	24	10	21	17	127	0	1
Operation Dept.										
Executives	1	1	1	1	1	1		6	1	2
Officials	136	103	36	150	35	30	72	562	20	14
Sub-total	137	104	37	151	36	31	72	568	21	16
Workers	454	250	144	746	137	195	542	2,468	24	17
Workers(Sub- contracted)								0	42	
Sub-total	454	250	144	746	137	195	542	2,468	66	17
Total	591	354	181	897	173	226	614	3,036	87	33
Technical Dept.										
Executives	1	1	1	1	1	1	1	7	1	
Officials	10	12	7	21	4	5	8	67		
Sub-total	11	13	8	22	5	6	9	74	1	0
Workers	71	53	48	97	43	62	104	478	58	
Total	82	66	56	119	48	68	113	552	59	0
Financial Dept.										
Executives	1	1	1	1	1	1	1	7	1	
Officials	7	10	8	15	7	10	11	68	8	2
Sub-total	8	11	9	16	8	11	12	75	9	2
Workers								0		
Total	8	11	9	16	8	11	12	75	9	2
Other Services										
Executives	1	1	1	1	1	1	1	7	1	
Officials	54	20	34	74	45	42	42	311		14
Sub-total	55	21	35	75	46	43	43	318	1	14
Workers	19	24	14	27	15	18	42	159	18	
Total	74	45	49	102	61	61	85	477	19	14
Total										
Executives	8	9	8	9	8	7	6	55	5	3
Officials	219	171	99	283	100	107	149	1,128	28	31
Sub-total	227	180	107	292	108	114	155	1,183	33	34
Workers	544	327	206	870	195	275	688	3,105	141	17
Total	771	507	313	1,162	303	389	843	4,288	174	51

Note:1 (Gemport); Subcontracted workers in the Operation Dept. are engaged in conventional cargo handling work which does not require much skill.

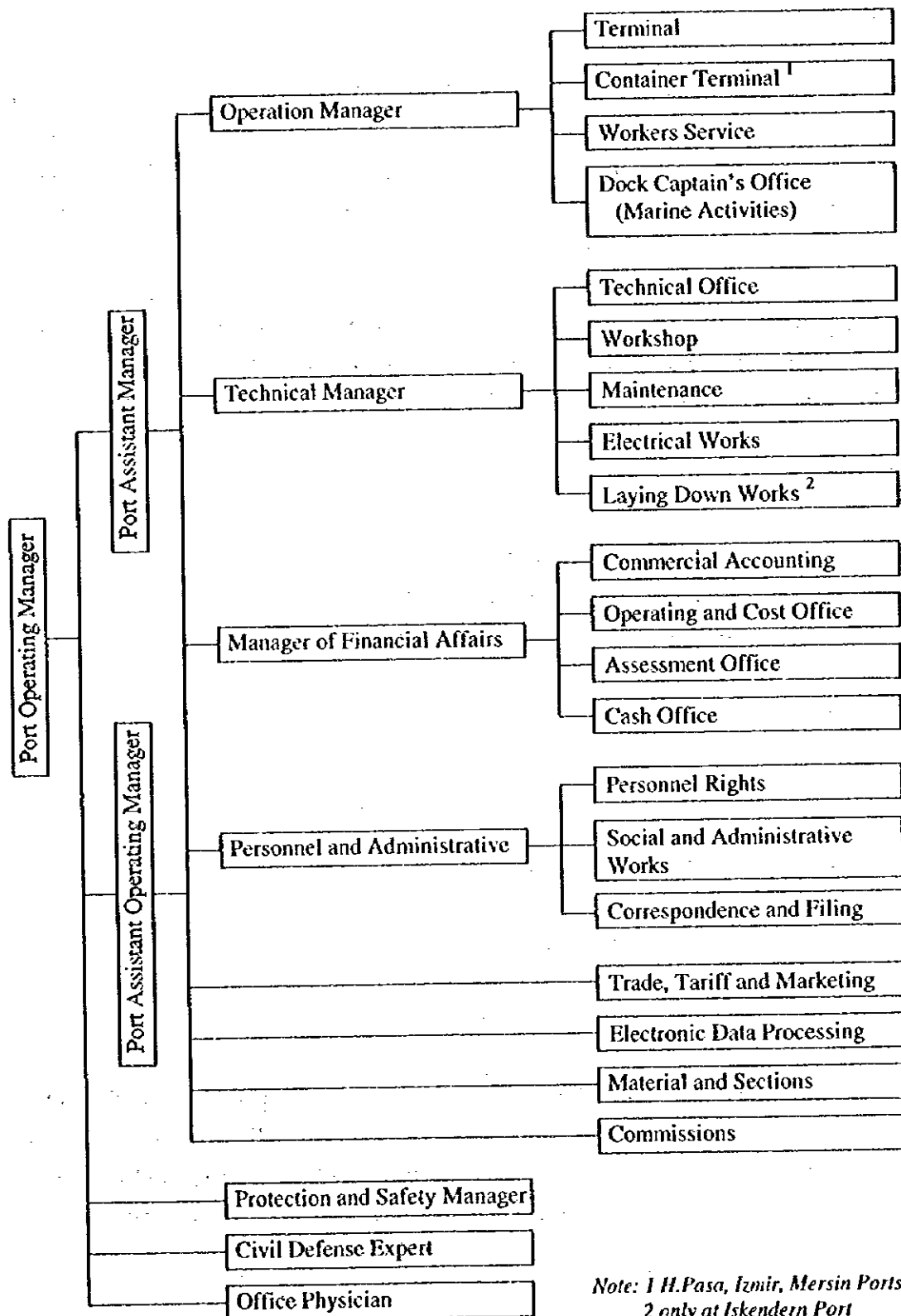
Tug and pilot personnel belong to the Technical Dept.

2 (Kumport); Personnel for container cargo handling are not included in figures in this Table. They are arranged by a shipping agent.

Accounting work is mainly handled in the headquarters in Istanbul.

Tug and pilot service, which is now operated by TDI, is scheduled to be transferred to the affiliated company of Kumport.

FIGURE 4.2.3 Organization Chart of Ports Operated by TCDD



(2) Port Operation

1) Berth assignment

The criterion of Haydarpasa Port in allocating berths for incoming vessels is "First come, first served", which is the world-wide accepted criteria. Secondly vessels carrying less cargo have more priority. There is no other criterion for priority of berthing such as type of vessel. For the decision of berthing, payment by a shipping agency must be completed and the shipping agency should demand the gang.

A port manager fixes the allocation based on the conclusion of the daily operation meeting. This meeting is chaired by a port manager. Regular attendants at this meeting are the operations chief, technical chief, dock captain, labour service chief and terminal chief.

2) Pilotage

At Haydarpasa Port pilotage and towage are compulsory for all vessels anchoring in the port area. However the vessels less than 300 NRT are exempt from the compulsory pilotage and towage operations.

3) Working Condition

a) Working time

Working time at the TCDD ports is regulated as follows:

Office works are carried out five days a week, i.e. from Monday to Friday, between 8.00 and 17.00 hours. Port services are offered 24 hours a day and throughout the whole year, except for the 1st and 2nd days of religious festivals.

Each shift in loading/unloading is 8 hours and the resting period within the shift is 30 minutes. For loading/unloading, two shifts of services are generally offered per day and the third shift may be performed on demand. Each shift in maritime services is also 8 hours and three shifts of services are offered. Overtime work up to three hours a day may be requested if necessary.

b) Constitution of the gang

Required number of workers in the gang by type of cargo is listed as follows:

Type of Cargo	in one gang	
	(Steersman)	(Operator)
Container	1	1 (in case of using the gantry crane)
	6	1 (in case of using the vessel crane)
Pallet Cargo	5	1
Paper Goods	5	1
Timber	5	1
Metal	6	1
Iron	6	1
Copper	6	1
Barreled Cargo	6	1
Boxed Cargo	10	1
Sack Bag	10	1
Bucket Cargo	10	1
Coal	10	1
Grain		3 (using the pneumatic unloader)

4) Training system

There are two training systems at Haydarpasa Port: lectures given in training course and on-the-job training. The Port has two training centers in Izmir and Adapazari, where training courses cover subjects such as cargo handling, customs, container, port-related regulations. Generally it takes one week to finish the course, though some courses continue for two months.

5) Computerization

At present, cargo data for container tracking system and a part of personnel information are handled by computers in Haydarpasa Port. The present system is called NOVEL and it has four computers active and 35 terminals of which 10-15 are active. The new computer system is now being developed in Haydarpasa Port and TCDD plans to extend the system to the other TCDD ports if the new system in Haydarpasa Port works successfully.

The new system is intended to cover all kinds of cargo-related activities in the port. In the future, personnel information is to be included by extending the present system and financial information is also to be covered by introducing the software installed in TCDD headquarters in Ankara.

This computer network project does not include the connection between ports in the country and abroad. In the future, this kind of connection is planned to be established between ports and shipping agencies as well.

The software of this system is based on ESCALE which is the software imported from Marseilles Port in France and its computer language is now being modified to get quicker response. COBOL programming language is used in this modification of ESCALE. The introduced system is called DPX2 340 BULL and works on UNIX Ver.2.0. The capacity of the harddisk and main memory is 1.2GB and 32MB respectively. The system has 64 ports and 24 terminals are planned to be established.

6) Documentation for import and export

The following documentation procedures are necessary for import and export.

a) Customs clearance

Customs clearance procedure is followed by shipping agencies on behalf of importers. The shipping agency starts the procedure by submitting the list including the arrival of the container to the port and the port sends it to customs.

After receiving the documents which show the content of the container from the shipping agency, customs office gives approval to unload the container. This procedure takes one day.

The container is unloaded and put on the stacking area in the port. The customs examination officer inspects the contents and gives approval. This procedure also takes one day.

Customs clearance procedure is completed with the payment of custom duties by the importer. Above mentioned procedure is required for empty containers.

b) Import procedure

The Directorate of economy has the right to issue an Import License (I/L). In order to get an I/L, the importer should prepare the following papers:

- Commercial register valid for one year
- Chamber of commerce and industry certificate valid for one year
- Documents of innocence attesting that the importer had fulfilled all his financial obligations towards the financial directorate
- Pro forma invoice issued by the exporter including all necessary information such as quantity, specification of the goods and value in foreign currency

All the above mentioned papers attached with an application form clarifying the intention of the importer to import the concerned cargo should be presented to the Directorate of economy.

As the next stage the following papers are required to open a letter of credit (L/C):

- Copy of the I/L
- Copy of the Pro forma Invoice

In this stage, making an insurance contract is not compulsory and the importer can have an insurance contract with any type of insurance company depending on the value of cargo.

These papers should be presented to a governmental or a private bank. Validity of the L/C is arranged by the importer and exporter and there is no certain limit of validity.

After being informed by the bank that the documents are ready, the importer waits for the vessel to arrive. In general the importer is informed by the shipping agency that the cargo is arriving. The importer requests the shipping agency to start the customs clearance procedures. The shipping agency makes comparison between the information listed in the bill of lading and the manifest of the vessel and makes sure of its correctness.

Customs inspects the cargo in the stacking yards of the port and makes a detailed report on about its condition and its applicability to Turkish specification standards.

After that the importer can pay the custom duties in accordance with the custom tariff.

c) Export procedure

First of all the exporter should have a banking facilities card which enables him to perform exportation, and this card serves as a guarantee to the bank to cover the value of exports, in case the exporter is not able to pay his obligations in due time.

Then the exporter purchases his cargo from the local market, packs it, loads it, and ships it to the border points like harbours, where customs have to inspect the cargo and issue an export manifest including the information such as quality, weight, quantity, specification and value of the exported cargo.

After the cargo is loaded on board the ship, the shipping agency is to submit to customs a customs declaration form including the information regarding the importer, exporter, consignee, vessel name, vessel agency, loading places (country), destination (country), numbers and types of container, bank information, location in the port etc.

When the importer gets the manifest, he has to pay the value of his imports to the bank in letter of credit, check, cash or remittance etc.

4.2.3 Port Finance

(1) Present Port Finance System

1) Budgets

Both the TCDD and TDI are subject to the budget preparation , execution and controls of the state-owned establishments.

Their annual operating and capital budgets are prepared and approved by the Board of Directors of the parent companies subject to annual overview by the Ministry of Transport, the State Planning Organization and the Ministry of Finance.

2) Accounts

All organizations in the public sector are required to adhere to the national uniform accounting system. The accounting concepts, classifications and definitions follow generally

accepted principles of accounting and the system is, on the whole, adequate for basic financial accounting.

3) Audits

Annual audits are conducted by the financial inspectors attached to the Ministry of Finance.

(2) Present Situation

The recent financial performance of TCDD and TDI ports are shown in Table 4.2.3 - 4.2.5.

Regarding the TCDD ports, although the ratio of operating income to operating costs has increased since 1993, the ports have suffered a loss since then due to the increase of non-operating costs. However, the loss has decreased significantly. Working ratio and operating ratio have also decreased and are within the maximum requirement of 50-60% and 70-75% respectively.

TDI ports got into the black in 1992 and total net income has increased steadily since then. Both working ratio and operating ratio have decreased significantly and since 1994 these ratios have been within the above mentioned maximum requirement.

TABLE 4.2.3 Profit and Loss Statement of TCDD Ports

	million TL					
	1990	%	1991	%	1992	%
Operating Income	280,097	127	560,536	123	981,430	109
Material Cost	12,770	6	20,221	4	32,259	4
Fuel Oil & Oil	5,355	2	8,031	2	13,631	2
Other Material	7,414	3	12,190	3	18,628	2
Personnel Cost	149,488	68	324,146	71	622,359	69
Wages	122,796	56	279,100	61	542,673	60
Salaries	26,692	12	45,045	10	79,687	9
Other Expenses	23,723	11	38,888	9	75,874	8
Energy & Water	4,148	2	8,365	2	17,961	2
Ordered Works	8,632	4	15,221	3	30,685	3
Other	10,942	5	15,301	3	27,228	3
Depreciations	34,780	16	59,480	13	108,853	12
General Expenses	457	0	11,614	3	58,647	7
Total of Operating Costs	221,217	100	454,348	100	897,992	100
Operating Profit	58,880	27	106,187	23	83,437	9
Non-operating Income	175,437	79	292,922	64	781,065	87
Non-operating (Financing) Costs	45,061	20	130,483	29	110,613	12
Profit for the Period	189,256	86	268,627	59	753,889	84
Working Ratio (%)	66.6		70.4		80.4	
Operating Ratio (%)	79.0		81.1		91.5	
Personnel Expenses to Revenue (%)	53.4		57.8		63.4	

Source: TCDD

Note: Working Ratio means the proportion of operating expense excluding depreciation versus operating income.

Operating Ratio means the proportion of operating expense versus operating income.

**TABLE 4.2.4 Balance Sheet of TCDD ports
(Active)**

million TL

	1991	1992	1993	1994	1995
Current Assets					
Cash and Banks	8,764	17,881	11,445	33,123	88,195
Receivables	1,285	4,909	4,619	5,035	26,881
Allowance for doubtful receivables	553	2,067	1,255	888	23,865
Other Receivables	0	0	0	0	4,033
Advances Given	3,071	43	204	7	0
Inventories	17,548	23,708	26,271	45,888	89,886
Other Current Assets	2,211	78,899	5,838	8,822	18,745
Total Current Assets	32,326	123,373	47,123	91,987	203,875
Non Current Assets					
Receivables	722	1,121	1,724	3,721	3,830
Tangible Fixed Assets	841,714	1,452,790	2,358,195	4,797,199	9,273,747
1. land and building sites	5,164	5,163	5,163	5,163	5,164
2. land improvement above ground	420,583	679,392	1,112,820	2,299,988	4,534,285
3. land improvement below ground	514	805	1,212	0	0
4. buildings and structures	65,713	109,143	179,562	356,147	733,343
5. signaling, telephone and telegraph	935	1,305	3,251	0	0
6. plants, machinery, apparatuses	13,146	43,119	79,439	265,565	440,990
7. electorical installations	12,738	19,800	31,399	0	0
8. transportation equipments	149,363	153,135	237,578	374,944	839,750
9. furniture and appliances	139,896	396,248	670,672	1,369,045	2,242,048
10. fixed assets under constructions	33,662	44,679	37,099	126,347	478,168
Total	842,436	1,453,911	2,359,920	4,800,920	9,277,577
Accumulated Depreciations	0	625,030	1,157,386	2,193,671	4,810,721
Special Assets subject to depreciations	0	2,047	0	0	0
Other Fixed Assets	173	426	2,759	465	538
Allowances for loss on inventories	552	0	0	0	0
Total Noncurrent Assets	0	831,354	1,205,293	2,607,713	4,467,394
General Total	0	954,726	1,252,415	2,699,700	4,671,269
Regulation Account	2,791	3,818	17,252	26,547	20,465

Source: TCDD

(Passive)		million TL				
		1991	1992	1993	1994	1995
Current Liabilities						
Loans Received Current Installements of Bonds Payable and Loans		0	75,112	157,593	425,981	566,992
Loans		6,120	5,462	18,670	165,790	48,139
Advances Received		20	2	2	0	0
Taxes, Dues, Other Charges Payable		195,560	161,765	482,637	1,026,313	1,594,375
Accrued Liabilities		148,110	130,303	506,925	1,719,785	3,263,346
Other Liabilities		7	1	745	0	0
Total Current Liabilities		349,817	372,645	1,166,572	3,337,870	5,472,852
Long Term Liabilities						
Credits Received		0	231,380	313,100	639,776	606,658
Payables		12	59	97	98	89
Total Long Term Liabilities		12	231,438	313,197	639,874	606,747
Total Liabilities		349,829	604,083	1,479,769	3,977,744	6,079,600
Equity Capital						
Paid Capital		0	0	0	0	2,023,197
Revaluation Surplus		154,867	238,268	365,698	982,992	1,741,266
Total Equity Capital		154,867	238,268	365,698	982,992	3,764,463
General Total		504,696	842,352	1,845,467	4,960,735	9,844,063
Regulation Account		2,791	3,818	17,252	26,547	20,465
Depreciation		370,819	625,030	1,157,385	2,193,671	4,810,721
Reserves		552	2,067	1,254	888	23,865
Total		878,858	1,127,307	2,384,526	5,650,150	14,699,113

Source: TCDD

TABLE 4.2.5 Profit and Loss Statement of TDI Ports

million TL

	1991	1992	1993	1994	1995
OPERATING REVENUE	248,510	495,399	902,587	2,343,057	4,346,919
PASSENGER, CARGO VEHICLE TRANSPORTATION SERVICES	8,706	12,648	20,819	37,233	67,353
Urban and Rural Line Transportation Service Revenue	8,706	12,648	20,819	37,233	67,353
PORT SERVICES	231,260	472,274	870,759	2,299,280	4,269,422
Pilotage and Tug Boat Service Revenue	157,079	311,360	577,575	1,540,734	2,836,960
Shelter Location Service Revenue	4,390	11,462	23,936	67,914	147,677
Fresh Water Revenue	7,959	22,140	27,729	46,678	65,737
Loading Service Revenue	12,655	20,233	35,522	118,542	208,576
Unloading Service Revenue	23,310	49,893	89,111	117,193	259,766
Waste Removal Service Revenue	0	0	0	21,926	31,975
Scale Service Revenue	0	0	0	2,178	6,917
Warehouse and Terminal Revenue	9,699	20,181	15,717	51,220	116,005
Commodity Installation and Protection Services Revenue				6,612	8,521
Passenger Lounge Service Revenue	7,088	17,200	65,672	210,309	357,792
Other Port Services Revenue	9,080	19,805	35,497	115,974	229,496
OTHER SERVICE REVENUE	8,544	10,477	11,009	6,544	10,144
OPERATING EXPENSE	274,528	438,433	723,544	1,226,402	1,837,920
FIRST ITEM AND EQUIPMENT	14,478	21,317	33,148	66,482	129,073
Fuel and Oils	10,455	16,664	24,613	53,010	99,265
Other First Item and Equipment	4,023	4,653	8,535	13,472	29,808
PERSONNEL EXPENSES	224,180	363,714	620,811	1,005,224	1,422,446
Salary and Fees	217,807	354,422	567,208	941,517	1,388,767
High Rank Reward Compensation and Retirement Bonus	6,373	9,292	53,603	63,707	33,679
EXTERNAL UTILITIES AND SERVICES	17,623	29,033	49,600	85,609	166,728
VARIOUS EXPENSES	7,030	9,319	11,585	21,796	44,672
TAX, FEES AND DEDUCTIONS	665	661	725	19,363	10,205
DEPRECIATION AND CONSUMER SHARES	19,975	31,387	42,142	84,065	146,190
Depreciation	n.a.	n.a.	11,826	14,543	49,397
REGULATION ACCOUNT	-9,423	-16,998	-34,467	-56,137	-81,394
NET OPERATING INCOME	-26,018	56,966	179,043	1,116,655	2,508,999
NON-OPERATING REVENUE	7,590	12,878	23,757	81,789	253,587
Interest Income	691	488	1,252	1,572	3,122
Previous Term Income and Profits	1,788	3,074	2,622	2,867	5,362
Others	5,111	9,316	19,883	77,350	245,103
NON-OPERATING EXPENSE	10,662	19,012	36,860	60,543	89,161
Marketing, Sales and Distribution Expenditure	3,468	5,619	10,904	19,975	25,340
Reserve Expenditure		425	405	730	5,956
Non Working Section Expenditure and Losses	5,955	11,379	23,563	36,162	56,054
Previous Term Expenditure and Losses	494	1,477	1,013	2,445	1,388
Others	745	112	975	1,231	423
NET NON-OPERATING INCOME	-3,072	-6,134	-13,103	21,246	164,426
NET INCOME	-29,090	50,832	165,940	1,137,901	2,673,425
Working Ratio (%)	n.a.	n.a.	78.9	51.7	41.1
Operating Ratio (%)	110.5	88.5	80.2	52.3	42.3
Personnel Expenses to Revenue (%)	90.2	73.4	68.8	42.9	32.7

Source: TDI

Note: Working Ratio means the proportion of operating expense excluding depreciation versus operating income.

Operating Ratio means the proportion of operating expense versus operating income.

(3) Present Port Tariffs

TCDD and TDI basically have the same tariffs. These tariffs also apply to other public ports. On the other hand, private port authority can set port tariffs according to the conditions of the port. The constitution of the present tariffs is as follows:

- Pilotage and Tug
- Sheltering
- Fresh Water Supply to Vessel
- Collection of Vessel's Discharge
- Lash Lighter
- Loading / Unloading, Shifting and Transshipment
- Terminal
- Warehousing
- Port Facilities
- Passenger
- Parking
- Weighing
- Renting the Port Tools, Devices and Vehicles

In order to set and revise tariffs, the central government's approval is necessary. Individual port management bodies cannot change their charges flexibly according to local conditions. Present tariffs for conventional and container cargo were determined in the 1995 and 1997 revision, respectively.

4.2.4 Present Problems regarding the Port Management and Operation

To achieve swift, safe and economical cargo-handling operations in a port for port users comprising consignees and shippers, adequate management and operations system must be adopted together with providing required physical facilities. From this point of view, the following matters are presumable problems common to the public ports in Turkey. They need to be solved to provide port users with upgraded port services.

As for the operational system of cargo handling, the situation differs by each port. However, in order to evaluate the systems of the existing ports and make use of them for the operation in the New Port, we list cargo handling problems which have been pointed out about Haydarpaşa Port as a typical case.

(1) Customs Regulations

One of the reasons for the long waiting time of containers in the Port is that the empty containers are subject to custom clearance. Since a container is not considered as the package of the commodity in it, the container itself is regarded as an imported commodity and tax is due on the container box itself even if it is empty. This is another factor preventing the door to door transportation.

Even after joining the Customs Union, the customs law and legislation have not been changed in accordance with the European Customs regulations so far.

(2) Cargo Handling Equipment

There exist two gantry cranes in Haydarpasa Port, however they are quite old and often require maintenance. This means that 24 hours continuous service is not available and as a result vessels have to wait for berthing and to use the gantry crane.

Since 3 or 4 transfer cranes out of 9 are not working, a mobile crane occasionally has to be hired by the agencies to make loading/unloading operations faster. However, the hired mobile crane can handle only 10 boxes/hour due to the congestion in the Port.

However it is more advantageous for small vessels to hire a mobile crane than to wait for the gantry crane, because the cost for hiring a mobile crane is lower than the vessel cost.

Since there are no trucks available for operations in the Port, agencies have to hire trucks and workers for quick loading/unloading operations.

(3) Stacking Yard

Since there is not enough space in the Port, agencies have to rent the area outside the Port for storing empty containers.

(4) Storage Area for the Hazardous Cargo

Some kinds of hazardous goods can be stored at the Port, while certain extremely dangerous cargo is sent to Municipality storage area in most ports in order to meet the

regulations. This situation requires strong communication between the Municipality and the Port when such cargo arrives at the Port. In order to provide better service for this kind of cargo, specialized locations and facilities such as dedicated piers and equipment must be provided for discharging explosive cargo.

(5) Tug and Pilot

Since tugs and pilots services are operated by TCDD and TDI respectively, insufficient linkage in the works of these services causes delay in the vessel schedule. A shortage of tugs also causes delay in the vessel schedule.

(6) Computerization in the Ports

Since the existing computer system can not be used for tracking containers in the yard, it sometimes takes a long time to find them.

The new computer system now being developed in Haydarpasa Port does not include the connection between ports in the country and abroad. In the future this kind of connection should be established not only between ports but also between the port and the port related organizations/agents such as customs and shipping agencies in order to simplify the present documentation procedure by Electronic Data Interchange.

The new system is planned to deal with the administrative information including financial and statistical data. In order to make effective use of it for a long-term port promotion strategy, it should be developed as early as possible.

4.2.5 Privatization in Turkey

The privatization program was initiated in 1983. Since then, related regulations have been enacted, and finally the new privatization law was enacted in 1994 upon formation of a political and social consensus on the need for privatization. Currently, the restructuring and sale of Turkey's state-owned enterprises are being managed by the Privatization Administration under the supervision of the Privatization High Council chaired by the Prime Minister.

Since 1985 a total of 157 companies have been taken into the privatization portfolio. Some of these are fully state owned enterprises, while others have more than 50% state shares. Currently there are 53 companies and some real estates in the portfolio, among which 35

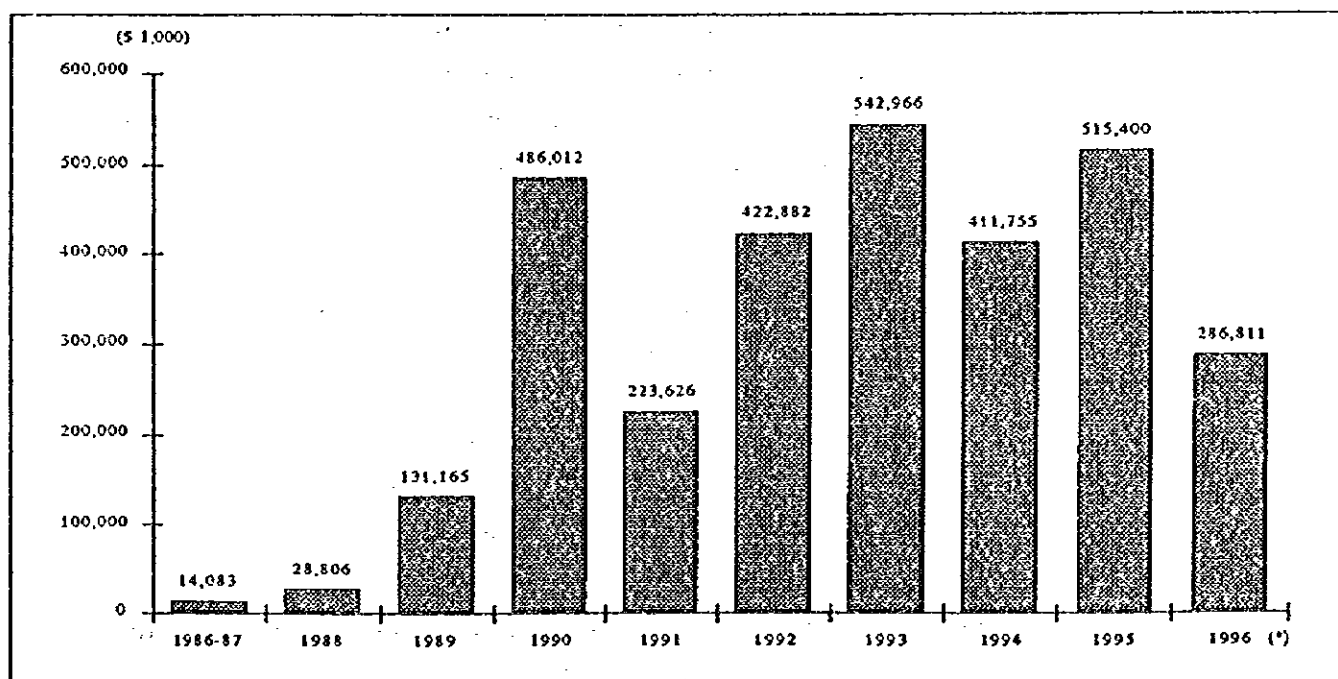
companies have more than 50% state shares.

Since 1986, privatization implementations have gained momentum and 113 companies were privatized either via sale of shares or asset sale, and no state shares were left in 95 of them.

Since 1985, total sales value of privatization implementations has amounted to about US\$3.1 billion. Total income from organizations on the privatization program during the 1985-1995 period, together with the US\$825 million of dividend income and US\$114 million of other income, reached US\$3.5 billion. In the same period total privatization expenses amounted to US\$3.2 billion, in which the largest item (about 60%) is financing in the form of equity participations and loans.

The past trend of privatization implementations by years is shown in Figure 4.2.4.

FIGURE 4.2.4 Privatization Implementations by Years



(*): As of October 3, 1996.

4.2.6 Privatization of the Ports

Eight ports operated by TDI are now to be privatized according to the privatization program prepared by the Privatization Administration. Tender announcement has already been published for the transfer of the operational rights of the eight ports, which are Antalya, Tekirdag, Trabzon, Rize, Ordu, Sinop, Giresun and Hopa ports on September 25, 1996. The last day of the tender notice is October 25, 1996. So far a total of 45 proposals have been made for the eight ports, and among them, 12 proposals are made by group companies.

According to the announcement, local bidders are allowed to bid alone or in joint venture with foreign bidders, provided however that the share of foreign capital in the joint venture must not exceed 49%. The private companies which are to operate the ports must be joint stock companies.

The bid tenders will be conducted with "bargaining" method whereby bids will be received and negotiations will be held, i.e. the eligible proponents will be invited to the negotiation meetings as instructed by the specifications after a preliminary examination on the proposals by the Commission of Adjudication. Following the completion of the negotiation meetings which are to be held based on the values determined by the Value Determination Commission, the results will be submitted to the Privatization High Council for approval.

The selection of the eight ports to be privatized is based on their cargo port characteristics, that is, cargo ports are generally more profitable than passenger ports. According to the Privatization Administration, the privatization of TCDD ports can probably be included in the plan next year, although it is not included in the program yet. The Privatization High Council must reach a decision for the privatization of TCDD ports. The outline of the program for the privatization of TDI ports is as follows;

- (1) The operational rights of the ports are to be granted to the operator company, while the ownership of the assets of the ports will belong to TDI.
- (2) The grant period of operational rights is 49 years at the maximum and after this period of operation a new contract will be made.
- (3) Although the operator company can make investments during this period, the facilities developed by these investments will be owned by TDI.

- (4) The operational rights consist of two facts as follows: firstly there is a certain amount of rent that the companies are to pay and additionally the companies are to give a certain percentage of their annual profit to the government.
- (5) According to the Privatization Administration, the operator company will be able to increase the tariffs up to 20% each year for the first five years after the privatization.
- (6) Port management is carried out by a Board of Directors consisting of five members, one of whom will be nominated by TDI, and in addition, one member will be nominated by the relevant Governorate to the Audit Board.

4.2.7 System of Port Development, Management and Operation

Present situation of existing ports' development, management and operations is shown in Table 4.2.6. Existing public ports are planned, constructed, owned and operated by state owned enterprises, i.e. TCDD or TDI with the exception of the private operator companies in Tekirdag, Gulluk and Dikili Ports.

Regarding the TDI Ports, after being privatized, operator and tug/pilot will be private companies. According to the Privatization Administration, operator companies will be able to plan and develop new facilities based on the agreement with the Privatization Administration in cooperation with TDI, but these facilities will be owned by TDI.

TABLE 4.2.6 Situation of Development, Management and Operation in Turkish Ports

		TCDD Ports	TDI Ports		TDI Ports after being Privatized		Private Ports
			Tekirdag, Gulluk, Dikili	Other Ports	Existing Facilities	Developed Facilities after Privatization	
Master Plan							
Construction	Breakwater					● *	
	Dredging						
	Reclamation						
	Terminal						●
Ownership						○	
Berthing Scheme		○ (Open)					
Operator		○	●	○			
Tug & Pilot		○ (TCDD & TDI)	○		●		○ & ●

○ Public ● Private

* Agreement with the Privatization Administration in cooperation with TDI is required.

4.3 Port Development Policy

Port development plans which are examined by the Turkish Government are shown in Table 4.3.1. The share of port development investment in the 7th five year plan is low. However, port development is considered critical in lifting up the Turkish economy. Ports can also play an important role in international physical distribution because of their strategic location.

Among port development plans, main purpose of projects is to create transshipment centers in multi-modal transportation for the potential traffic between Europe, Middle East and East countries, While container terminals are the main component of port development projects. In terms of financing, Built-Operation-Transfer (B.O.T.) is thought one of the effective alternatives among projects listed in the Table.

TABLE 4.3.1 Port Development Plan in Turkey

Project Name	Purpose	Characteristic	Present Status
Iskender Container Terminal	-to increase the capacity to 4 mil. tons/year (300,000TEU) -to serve traffic created by GAP region	-at least 2 container terminal -breakwater extension -cost : approximately 250 mil. \$ -BOT type, credit	-feasibility study by TCDD -detailed feasibility, EIA & engineering study completed in 1995 investment program
Port of Candarli (North Aegean Sea Port)	-to serve as an alternative new port for Izmir -to act as transshipment center for the potential traffic between Europe & Middle East, East countries	-container terminal in general -bulk terminal -target capacity:30 mil. tons/y -cost : 1 billion \$	-applied for EIB -pre investigation & EIA study has started by DLH in 1996 investment program
Filyos Port	-to serve traffic from/to Anatolian and Black sea -the port for industrial development at Filyos area	-capacity : 23 mil. tons/year -cost: approximately 1.4 bil. \$	-feasibility study by JICA -revision study is preparing
Derince Container Terminal	-to construct new terminal of 700,000 TEU capacity at Derce	-all required facilities -highway connection facility -cost: approximately 500 mil. \$ -BOT type, credit	-feasibility and EIA study completed by DLH in 1995
Mersin Container Port	-to serve traffic created by GAP area -to integrate to container transmission center	-all required facilities protected by breakwater -capacity : 1 mil. TEU/annual -cost : approximately 1 bil. \$	-feasibility \$ engineering study contracted in 1995 investment program
North Marmara Port (Tekirdag Port)	-to increase the capacity of ports at Marmara Sea, for demand of especially international traffic	-new container hub port to handle 1 mil. TEU --16m deep container terminal & general cargo quays	-feasibility study is going on by JICA