Table A-2-1. EXPORT BY COMMODITY
(value in tala thousand, fob)

During period	1986	1987	1988	1989	1990	1991
Coconut oil	6542	8730	11688	7000	4168	22
Cocoa	3185	2622	1260	2143	502	6
Copra meal	658	757	929	653	375	-
Copra	1049	65	1970	3237	1101	-
Taro	4335	5077	5201	5849	3502	6878
Coconut Cream	2822	3109	3874	5093	5576	5274
Other exports						
Beer	280	469	643	725	861	849
Cigarettes	688	618	684	694	586	691
Fruit juice	319	195	53	75	18	-
Timber	592	396	1084	135	21	10
Automotive wiring harnesses	-	-	-	-	-	2809
Other	1859	1108	2345	2290	2727	1248
Domestic Exports	22329	23146	29731	27894	19437	17787
Re-exports	1158	1822	1666	1312	1057	537
TOTAL	23487	24968	31397	29206	20494	18324

Source: Central Bank of Western Samoa

Table A-2-2 SECTORAL ALLOCATION OF DEVELOPMENT EXPENDITURE
(WS$ Million at constant 1991 prices)

Sector	Total	%
Economic sector:		
Agriculture & livestock	17.2	7.1%
Fisheries	2.8	1.1%
Forestry	18.1	7.5%
Environment & land use	7.5	3.1%
Industry, trade & banking	3.9	1.6%
Tourism	3.7	1.5%
Other	0.1	0.0%
	53.3	22.0%
Infrastructure:		
Transportation	50.4	20.9%
Energy	32.2	13.3%
Building & construction	16.9	7.0%
Postal & communications	26.9	11.1%
Water & sewerage	20.6	8.5%
	147.0	60.8%
Social services:		
Education & training	28.9	12.0%
Health & nutrition	8.1	3.4%
Public safety	1.9	0.8%
Other social services	2.4	1.0%
	41.3	17.1%
Total	241.6	100.0%

TABLE A-2-3
SOURCES OF EXTERNAL ASSISTANCE AND LOANS
(WS$ MILLION AT CONSTANT 1991 PRICES)

	Grant	Loans	Total	%
Bilateral:				
Australia	12.8		12.8	8%
France	0.7		0.7	0%
Germany	3.5		3.5	2%
New Zealand	9.1		9.1	5%
Japan	38.6		38.6	23%
People's Republic of China		10.4	10.4	6%
Other		0.6	0.6	0%
	64.7	11.0	75.7	45%
Multilateral:				
Asian Development Bank		23.6	23.6	14%
European Economic Community	10.6	10.9	21.5	13%
UN Capital Development Fund	1.0		1.0	1%
UN Development Programme	7.9		7.9	5%
World Bank	0.2	20.8	21.0	13%
World Health Organization	3.0		3.0	2%
Other	0.8	0.0	0.8	0%
	23.5	55.3	78.7	48%
Not identified	11.8		11.8	7%
Total bilateral + multilateral	100.0	66.3	166.3	100%

Table A-2-4 WESTERN SAMOA - GROSS ODA FLOWS

	1988		1989	
	US$ m	%	US$ m	%
Bilateral				
Australia	7.3	22	7.6	23
Germany	2.9	9	2.2	7
Japan	7.7	24	6.0	18
New Zealand	4.0	12	3.5	11
United States	-	-	1.0	3
Other	0.2	1	0.2	1
subtotal	22.1	68	20.5	62
Multilateral				
ADB	2.3	7	4.4	13
EC	3.8	12	3.1	9
IDA	1.0	3	1.0	3
UNDP	2.0	6	2.0	6
Other	0.7	2	1.4	4
Subtotal	9.8	30	11.9	36
Arab Countries	0.5	2	0.9	3
TOTAL	32.4	100	3.0	100

Source: OECD Geographical Distribution of Financial Flows to Development Countries
Note : Addition on figures may not equal totals due to rounding

Table A-2-5 FUND OF RELATED PROJECTS

	1992/1993			1993/1994			1994/1995			Total 1992/1993 - 1994/1995			External Financing		
	Local	Extrnl	Total	Local	Extrnl	Total	Local	Extrnl	Total	Local	Extrnl	Total	Source	Type	% Share
Transportation															
Le Mafa Pass & Richardson Road	1,518	3,220	4,738							1,518	3,220	4,738	ADB/IDA	Loan	68
Eastern Upolu Road	357	5,763	6,120		2,550	2,550				357	8,313	8,670	IDA	Loan	96
Road Resealing Project	2,200	1,000	3,200	2,500	1,000	3,500				4,700	2,000	6,700	AIDAB	Grant	30
Savaii North Coastal Road (CHECK WITH PWD)	9,206	2,609	11,815	942	4,157	5,099	511	147	658	10,659	6,913	17,572	IDA	Loan	39
Plantation Access Roads	200		200	200		200	200		200	600		600	-	-	
Marine Training School	40		40	50		50	50		50	140		140	-	-	
Total Transportation	13,521	12,592	26,113	3,692	7,707	11,399	761	147	908	17,974	20,446	38,420			53
Building & Construction															
Upgrading Public Works	450	1,100	1,550	440	500	940	440	500	940	1,330	2,100	3,430	AIDAB	Grant	61
Government Administration Building	2,100	10,400	12,500	1,000		1,000				3,100	10,400	13,500	PROC	Loan	77
Total Building & Construction	2,550	11,500	14,050	1,440	500	1,940	440	500	940	4,430	12,500	16,930			74
Environment & Land Use															
Apia Urban Area Development	800		800	3,200		3,200	2,400		2,400	6,400		6,400		-	
Urban & Regional Planning Act								60	60		60	60		Grant	100
Biodiveraity		21	21		250	250		250	250		521	521	SPREP/GEF	Grant	100
Apia Waste Management Project	200		200	50	100	150		150	150	250	250	500	SPREP/WHO	Grant	50
Total Environment & Land Use	1,000	21	1021	3,250	350	3,600	2,400	460	2,860	6,650	831	7,481			11

Table A-2-6 OFFICIAL REHABILITATION ASSISTANCE COMMITMENTS

Country/Agency	Sector	US$ (m)
Asian Development Bank	Power Sector (subject to Board approval)	0.50
Australia	Special grant-education	1.52
	Commodities-	TBA
European Community	Power and other public sector works	0.40
Netherlands	Education	0.20
Japan	Health - hospital rehabilitation	0.30
New Zealand	Education	2.74
	- primary schools	(0.54)
	- junior secondary schools	(2.20)
Total		5.66

Table A-4-1 Exxpenditure & Revenue, MOT

EXPENDITURES-CURRENT	BUDGET 1986	BUDGET 1987	BUDGET 1988	BUDGET 1989	BUDGET 1990	BUDGET 1991 Jan-Jun	BUDGET 1991/1992 (July'91-June'92)
Salaries & Overtime	181,820	162,090	181,960	254,090	308,225	184,342	393,386
Wages	80,100	82,965	93,830	95,896	108,015	63,530	128,767
Beacons & Buoys	5,000	8,000	10,000	12,000	15,000	6,500	15,000
Local Travel	2,500	2,650	3,100	3,700	4,850	2,510	3,550
Overseas Travel	2,000	3,000	4,000	5,000	5,000	1,000	40,960
Office Expenses	10,500	33,400	33,900	36,100	37,000	20,178	55,400
Office Machine	500	500	1,270	2,200	2,000	2,600	7,500
Office Furniture	500	500	1,200	1,400	1,800	1,600	8,500
Machinery & Equipment	9,500	5,815	3,500	3,500	1,000	1,000	24,000
Electricity & Fuel	47,000	55,000	48,000	59,000	53,000	13,000	90,000
Operating Supplies	7,000	12,500	13,000	14,000	13,150	9,700	24,000
Operation of Vehicles	103,000	113,000	93,000	140,000	180,000	46,000	466,000
Consultancies	-	-	25,000	8,000	-	-	-
Upgrading of the Apia Wharf	-	-	-	-	-	-	72,000
Building Maintenance	3,000	10,000	8,000	8,000	7,500	15,000	60,000
D E V E L O P M E N T							
Improvement other than Bldgs.	-	-	-	20,000	20,000	10,000	456,500
Disaster Rehabilitation	-	-	-	-	500,000	10,000	20,000
Expenditure Total	452,420	489,420	503,760	662,886	1,256,540	386,960	1,865,563
R E V E N U E S							
Light Dues & Pilotage	120,000	95,000	100,000	80,000	100,000	50,000	115,500
Port Dues	100,000	115,000	120,000	100,000	100,000	80,000	131,250
Wharfage	280,000	280,000	270,000	270,000	270,000	150,000	351,750
Storage of Containers	10,000	10,000	5,000	5,000	10,000	4,000	8,400
Berthage & Dockage	70,000	70,000	65,000	60,000	80,000	40,000	84,750
Levies	168,000	100,000	100,000	100,000	80,000	50,000	945,000
Miscellaneous	55,000	60,000	60,000	55,000	80,000	200,000	420,000
Revenue Total	803,000	730,000	720,000	670,000	720,000	574,000	2,056,650

Table A-4-2(1) Expenditure & Revenue, PWD

PUBLIC WORKS DEPARTMENT

Expenditure Estimate & Revenue Projections

1986 to 1992

Item Description	1986	1987	1988	1989	1990	6 Months 1991	1992
CURRENT EXPENDITURE BUDGET							
Salaries & Overtime	$1,224,165	$1,257,050	$1,350,080	$1,498,775	$1,454,585	$1,122,115	$2,234,216
Wages & Overtime	1,222,130	1,161,280	1,309,940	1,260,020	1,141,905	874,863	1,546,685
Local Travel	34,000	38,000	110,000	125,000	136,000	47,700	161,175
Overseas Travel	8,000	12,000	12,000	30,000	21,250	4,000	20,000
Office Expenses	36,000	46,000	70,000	75,000	73,100	35,000	101,000
Office Machine	2,000	1,500	2,000	4,000	3,400	1,500	3,500
Furnitures & Equipments	1,000	1,000	1,500	4,000	3,400	1,500	22,000
Machinery & Equipments	8,000	6,000	10,000	5,000	3,400	2,000	5,000
Electricity & other Fuel	35,000	32,000	40,000	48,000	47,600	33,000	60,000
Operating Supplies	993,000	950,000	920,000	810,000	818,000	385,500	850,000
Plant & Vehicle Operations	1,707,000	1,500,000	1,350,000	1,250,000	1,487,500	952,860	1,650,000
Building Maintenance	300,000	270,000	300,000	320,000	110,500	117,500	366,500
Road Maintenance	1,000,000	1,130,000	1,255,000	1,500,000	1,530,000	887,000	2,720,500
Water Supply Maintenance	760,000	1,040,000	1,200,000	1,470,000	1,190,000	444,000	1,250,000
Consultancy	0	0	0	6,000	7,650	5,460	0
Accommodation	18,000	40,000	23,000	22,000	18,700	11,000	25,000
Furnitures & Appliances	40,000	50,000	60,000	70,000			0
Ground & Misc Maintenance	52,000	50,000	50,000	64,000	51,000	65,000	0
Street Lights	125,000	130,000	135,000	230,000	212,500	62,000	0
Public Toilets	100,000	100,000	75,000	70,000	0	0	0
Bridges Seawalls & Fords	80,000	90,000	50,000	180,000	195,000	50,000	500,000
Licence Committee (Elec.)	500	500	0	0	0	0	0
Apia Sewerage Maintenance	3,000	5,000	0	0	0	0	0
Dredging	0	2,500	0	0	0	0	0
Store Recoverable	0	0	0	0	0	730,197	850,000
Contingencies	5	5	5	5	5	5	5
TOTAL CURRENT	$7,748,800	$7,912,835	$8,323,525	$9,041,800	$8,505,995	$5,832,700	$12,365,581

Table A-4-2(2) Expenditure & Revenue, PWD

PUBLIC WORKS DEPARTMENT

Expenditure Estimate & Revenue Projections
1986 to 1992

Item Description	1986	1987	1988	1989	1990	6 Months 1991	1992
DEVELOPMENT EXPENDITURE							
Salaries & Overtime	$ 11,395	$ 10,825	$ 11,370	$ 0	$ 51,520	$ 0	$ 0
Wages & Overtime	189,670	344,440	164,865	0	376,090	0	0
Local Travel	8,500	9,000	0	0	150,730	0	0
Office Expenses	0	0	0	0	28,000	10,500	0
Furnitures & Fittings	0	0	0	0	6,000	0	0
Operating Supplies	32,600	40,000	46,000	0	70,000	0	400,000
Plant & Vehicle Operations	15,500	15,000	25,000	0	104,920	12,400	54,140
Building & Improvement	0	0	150,000	27,000	40,000	711,800	1,310,000
Improvements other than Bldgs.	30,000	400,000	840,000	2,319,999	13,566,000	4,894,000	18,050,200
Water Supply Projects	30,000	100,000	250,000	150,000	1,245,000	746,500	1,080,000
Disaster Rehabilitation	0	0	0	2,500,000	6,250,000	0	0
Harbour Construction	5,000	0	0	0	0	0	0
Accommodation	0	0	0	0	8,000	0	0
Airport Development	870,000	550,000	0	0	0	0	0
Apia Water Supply Project	750,000	2,206,000	1,399,000	1,527,000	625,000	959,500	800,000
Contingencies	5	5	0	0	0	0	0
TOTAL DEVELOPMENT	$1,942,670	$3,675,270	$2,906,235	$6,523,999	$22,521,260	$7,334,700	$21,695,340
REVENUE							
Civil	$320,000	$200,000	$ 33,000	$ 42,000	$ 40,000	$ 66,300	$ 270,000
General Services	509,000	300,000	220,000	150,000	200,000	80,000	150,000
Plant Operations	375,000	400,000	516,000	950,000	900,000	1,100,000	1,180,000
Royalties & Miscellaneous	30,000	50,000	42,000	63,000	50,000	12,00	50,000
Transport Pool Operations	509,000	420,000	270,000	180,000	350,000	198,000	344,000
Water Rates	140,000	280,000	230,000	200,000	250,000	225,000	350,000
Mechanical Services	710,000	500,000	235,000	120,000	230,000	160,000	1,025,000
Plumbing Services	224,000	140,000	22,000	34,000	40,000	25,000	92,000
Salelologa Services	100,000	80,000	20,000	40,000	70,000	40,000	455,200
Concrete Products	50,000	30,000	40,000	0			0
Quarry Sales	160,000	100,000	80,000	0	40,000	25,000	850,000
Stores Sales	0	0	0	0	0	1,815,000	935,000
TOTAL REVENUE	$3,127,000	$2,500,000	$1,708,000	$1,779,000	$2,170,000	$3,746,300	$5,701,200

Data of Natural Conditions

Table A-5-1 Rainy Days per Month

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1971	30	24	26	23	14	16	11	17	21	24	20	25	251
1972	24	24	19	24	13	13	11	11	21	18	15	21	214
1973	21	23	21	19	14	14	17	20	25	26	28	28	256
1974	25	24	25	22	15	18	16	7	15	19	21	20	256
1975	26	19	22	19	22	20	16	14	24	25	16	27	227
1976	27	23	23	19	17	17	25	10	4	13	21	21	251
1977	19	21	23	15	15	11	9	8	9	15	20	17	220
1978	30	18	28	17	19	15	4	17	12	22	24	22	182
1979	25	24	20	17	17	20	13	8	13	18	12	19	228
1980	24	19	25	17	18	18	13	18	26	24	19	18	239
1981	22	21	24	—	—	—	10	18	18	22	22	26	183
1982	27	24	25	12	15	9	12	18	9	11	14	8	184
1983	19	13	16	11	15	12	8	6	12	17	11	24	164
1984	21	22	25	21	14	14	10	13	12	14	14	24	204
1985	22	27	22	23	18	18	13	18	10	13	15	18	217
1986	22	17	22	28	19	14	18	9	19	14	11	22	215
1987	22	19	21	13	8	8	4	6	1	10	8	21	141
1988	23	22	20	17	22	12	20	17	21	21	22	19	236
1989	23	24	25	25	12	12	11	4	7	18	27	13	201
1990	25	5	26	16	13	16	10	12	7	15	19	19	183
1991	22	23	22	14	12	14	15	17	5	14	22	—	180
Mean	24	21	23	19	16	15	13	13	14	18	18	21	211

Table A-5-2 Monthly Rainfall

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1977	366.9	261.9	454.9	61.9	97.9	85.6	59.4	44.1	57.1	132.7	149.5	134.0	1.905.9
1978	959.7	197.1	640.9	100.5	141.6	125.7	130.0	267.7	70.1	281.6	513.3	412.9	3.841.1
1979	209.3	270.4	332.0	100.3	244.3	119.9	208.7	51.7	236.2	348.9	247.8	391.6	2.761.1
1980	372.2	310.2	464.4	302.7	216.1	161.2	162.4	161.9	593.1	488.0	208.8	180.1	3.621.1
1981	259.3	361.3	634.9	—	—	—	67.5	75.2	198.6	350.3	438.2	596.6	2.981.9
1982	481.1	947.1	132.6	33.9	289.3	51.5	71.6	276.3	63.1	100.9	125.4	63.1	2.635.9
1983	228.5	141.1	256.5	130.9	75.8	113.8	14.5	105.2	23.6	82.6	202.4	573.7	1.948.6
1984	274.1	260.2	277.0	131.0	59.4	301.2	90.5	158.3	191.5	159.2	674.0	619.9	3.196.3
1985	440.1	379.1	354.8	240.4	288.6	141.7	96.6	84.5	71.3	86.4	65.8	145.4	2.394.7
1986	489.1	162.6	349.8	249.9	288.2	158.3	149.2	75.2	202.2	155.7	125.5	460.6	2.866.3
1987	508.8	—	—	—	—	—	—	—	—	—	—	—	—
1988	848.6	348.4	312.3	207.0	364.5	97.4	198.3	130.7	177.7	207.9	251.1	259.2	3.403.1
1989	720.7	863.6	308.8	321.6	132.1	76.6	89.2	7.0	62.3	116.7	302.2	182.7	3.183.5
1990	280.9	78.8	497.8	225.7	127.9	116.9	93.3	45.5	61.0	110.9	359.1	176.8	2.174.6
1991	359.5	935.1	256.9	146.2	150.8	147.3	143.8	101.4	25.7	166.2	351.6	606.0	3.390.5
1992	200.4	519.8	451.4	—	—	—	—	—	—	—	—	—	—
Mean	437.5	402.4	381.7	173.2	190.5	130.5	112.5	113.2	145.3	199.1	286.8	343.0	40.304.6

Table A-5-3 Annual Occurrence Frequency of Wind Speed and Distribution (1978-1992.4)

(%)

Speed in Knots	N	NE	E	SE	S	SW	W	NW	Total
0 − 2									48.482
3 − 13	1.949	3.068	19.337	7.144	2.427	0.705	1.325	1.584	37.539
14 − 27	0.451	0.535	11.266	0.715	0.064	0.042	0.180	0.445	13.698
28 − 40	0.027	−	0.111	0.005	−	−	0.011	0.053	0.207
40 −	0.027	0.005	0.037	−	−	−	−	0.005	0.074
Total	2.454	3.608	30.751	7.864	2.491	0.747	1.516	2.087	100.000

Table A-5-4 Wind Direction at Apia (1978-1992.4)

(%)

Month	N	NE	E	SE	S	SW	W	NW	CALM
Jan.	0.408	0.387	1.457	0.376	0.191	0.101	0.228	0.355	4.917
Feb.	0.567	0.291	1.251	0.323	0.148	0.101	0.371	0.498	4.176
Mar.	0.334	0.530	1.950	0.467	0.217	0.090	0.180	0.228	4.695
Apr.	0.228	0.281	1.669	0.562	0.276	0.079	0.180	0.164	4.155
May.	0.074	0.186	2.496	0.774	0.217	0.058	0.053	0.090	4.202
Jun.	0.058	0.185	0.946	0.896	0.207	0.037	0.032	0.032	3.164
Jul.	0.026	0.159	3.391	1.256	0.350	0.069	0.016	0.079	3.005
Aug.	0.042	0.233	3.932	1.086	0.329	0.032	0.048	0.032	3.386
Sep.	0.090	0.302	3.805	0.864	0.254	0.016	0.026	0.048	3.349
Oct.	0.111	0.260	3.392	0.562	0.090	0.016	0.042	0.021	4.144
Nov.	0.233	0.360	2.692	0.572	0.122	0.048	0.064	0.148	4.663
Dec.	0.281	0.318	1.727	0.270	0.106	0.101	0.276	0.392	4.626
Total	2.452	3.492	30.708	8.008	2.507	0.748	1.516	2.087	48.482

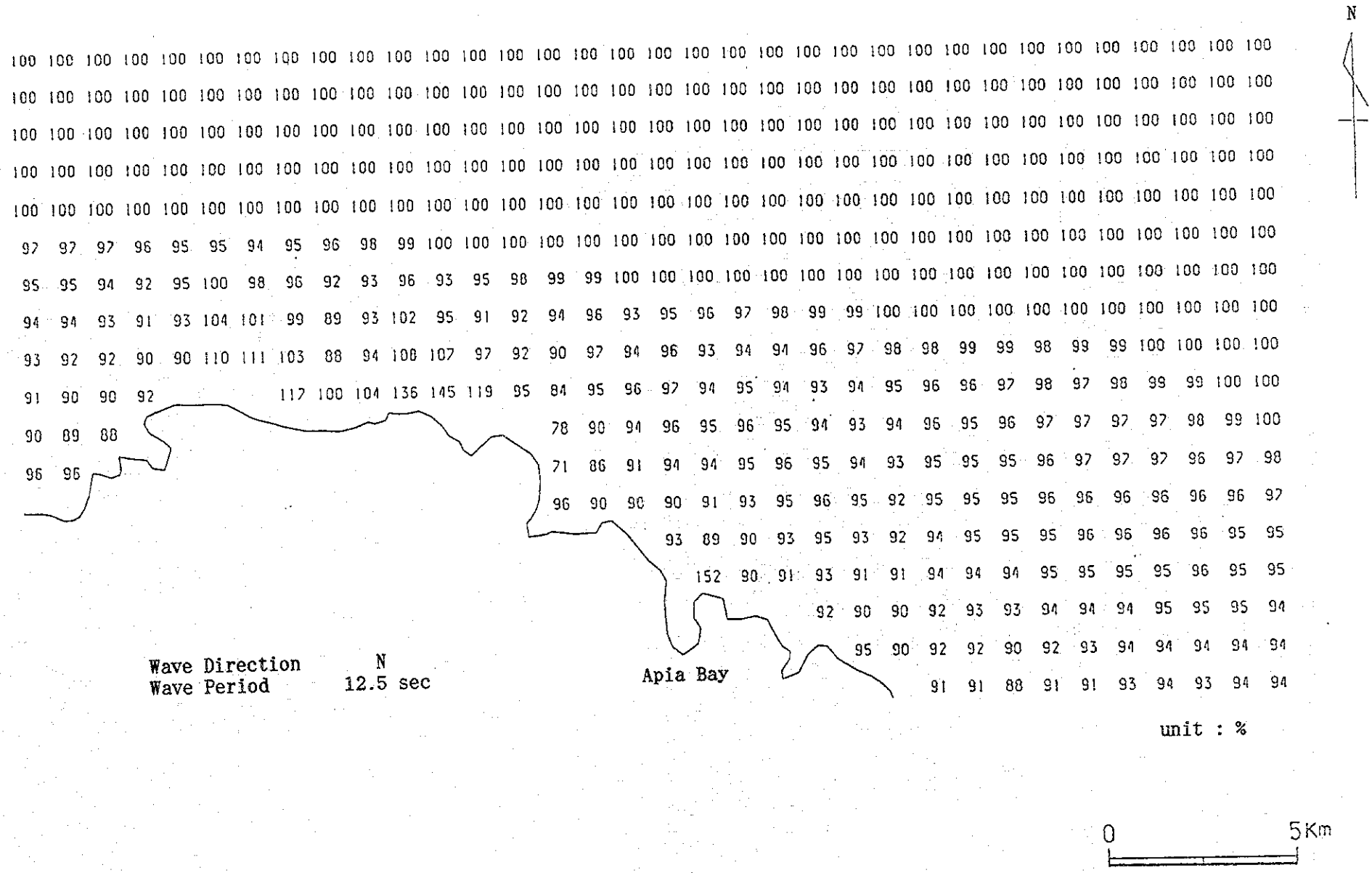


Fig. A-5-5 DISTRIBUTION OF WAVE HEIGHT RATIO (LARGE AREA)

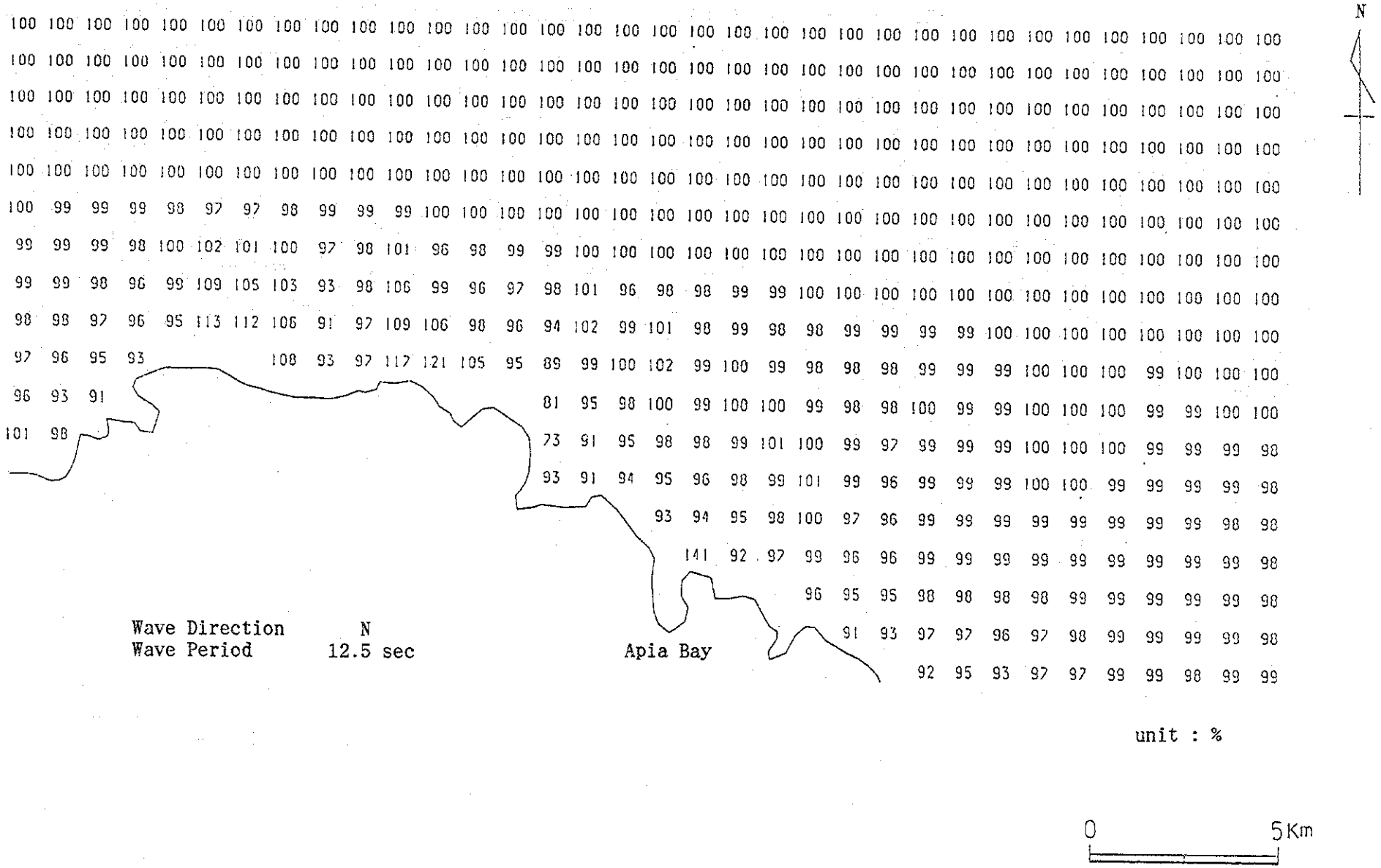


Fig. A-5-6 DISTRIBUTION OF REFRACTION COEFFICIENT (LARGE AREA)

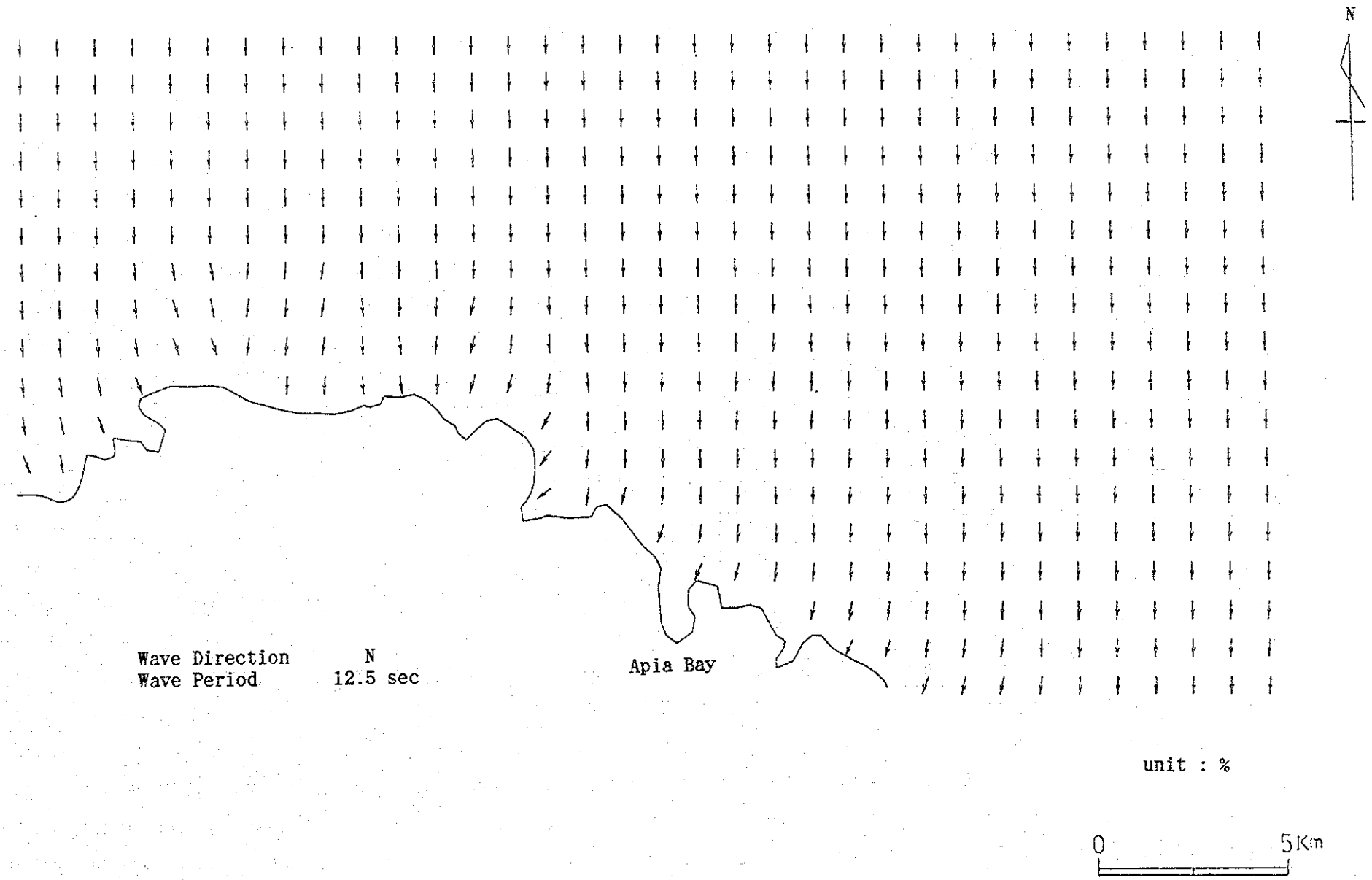


Fig. A-5-7 DISTRIBUTION OF WAVE DIRECTION (LARGE AREA)

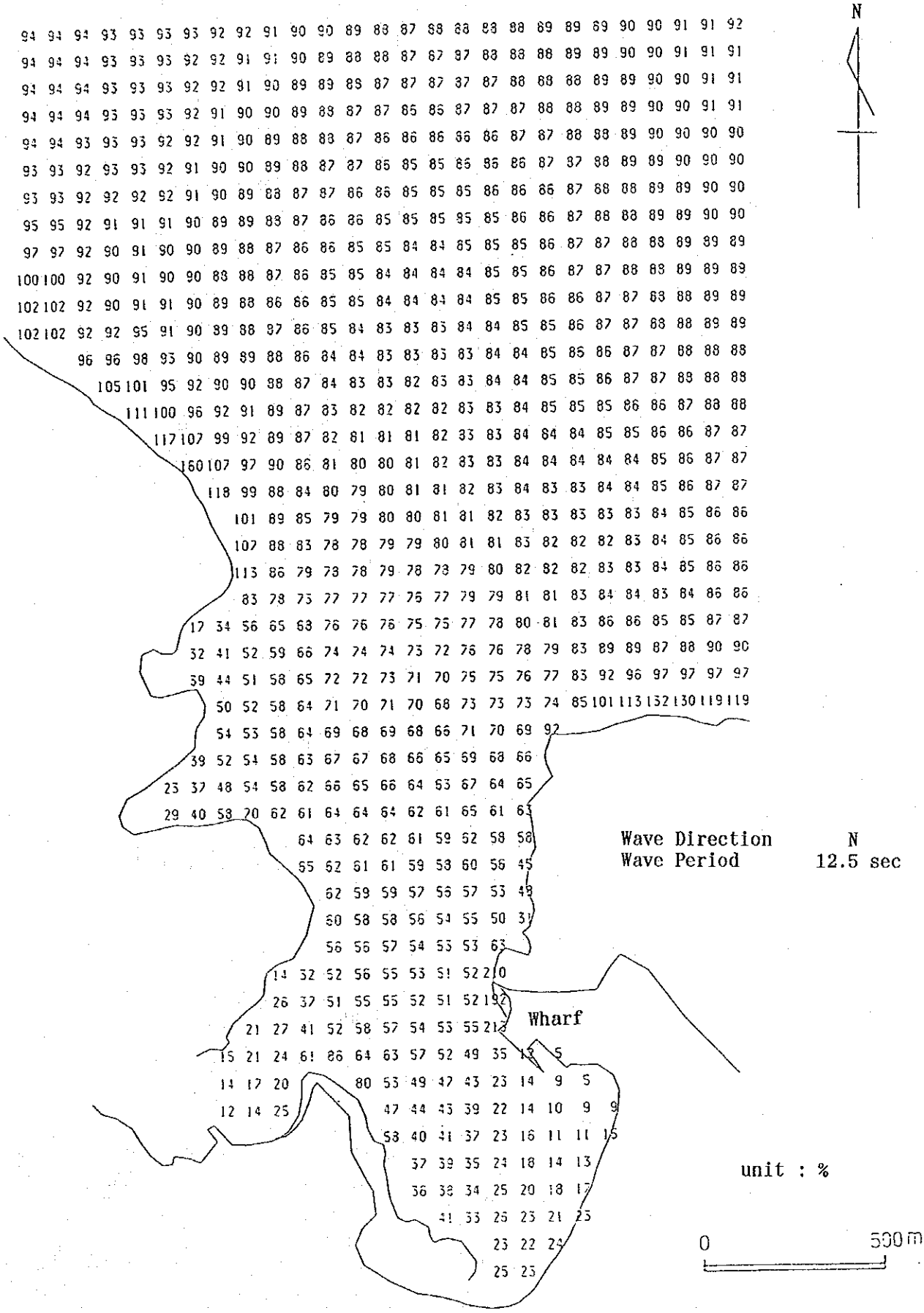


Fig. A-5-8 DISTRIBUTION OF WAVE HEIGHT RATIO (APIA BAY AREA)

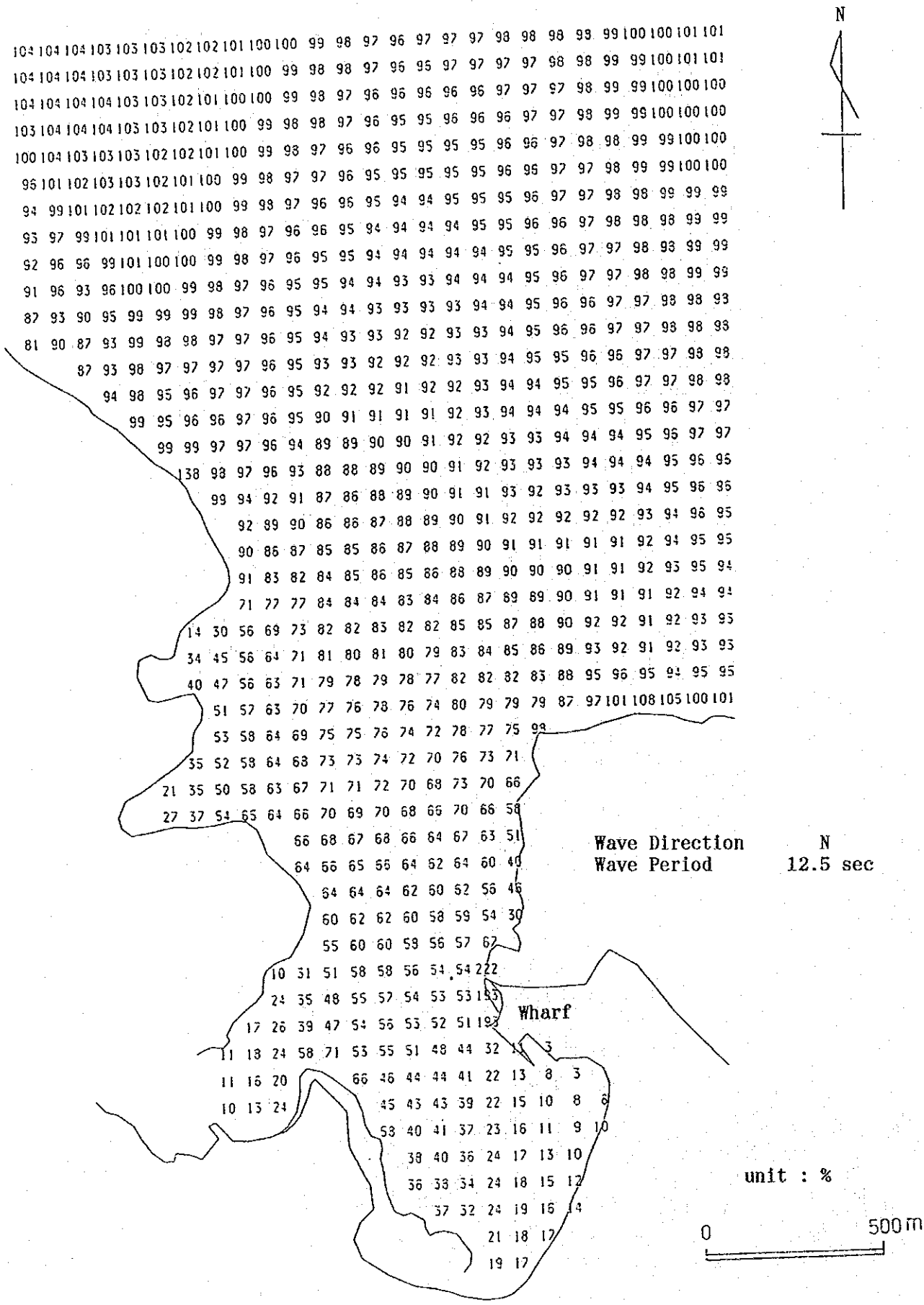


Fig. A-5-9 DISTRIBUTION OF REFRACTION COEFFICIENT (APIA BAY AREA)

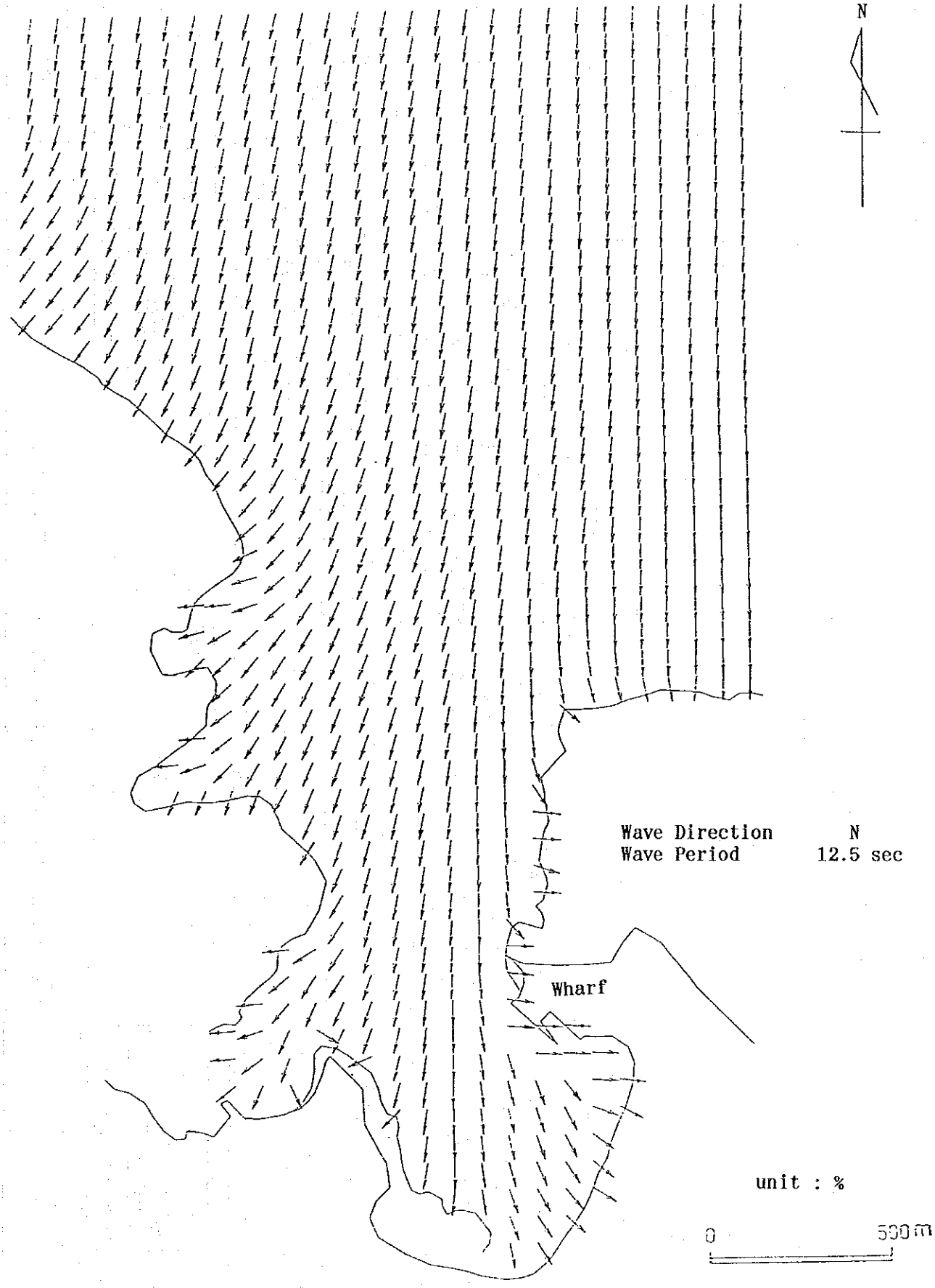
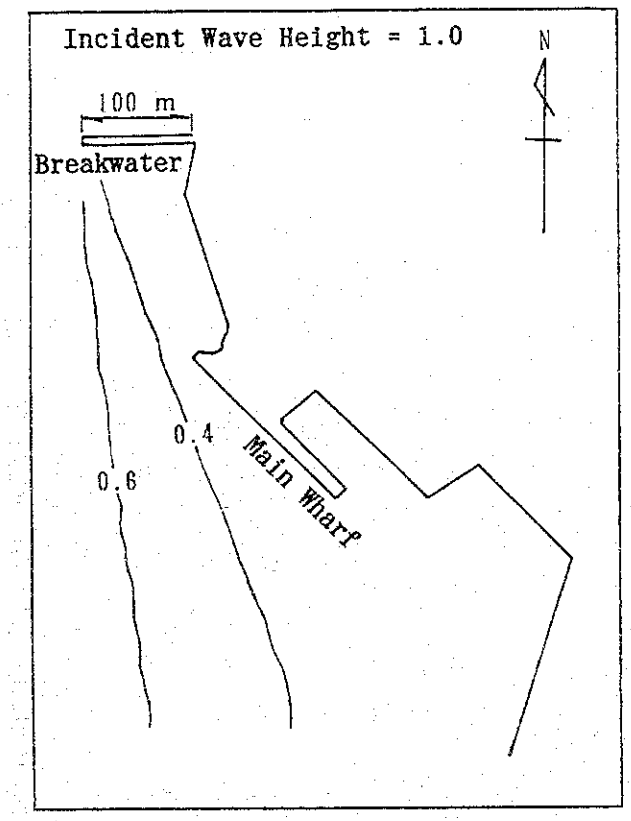
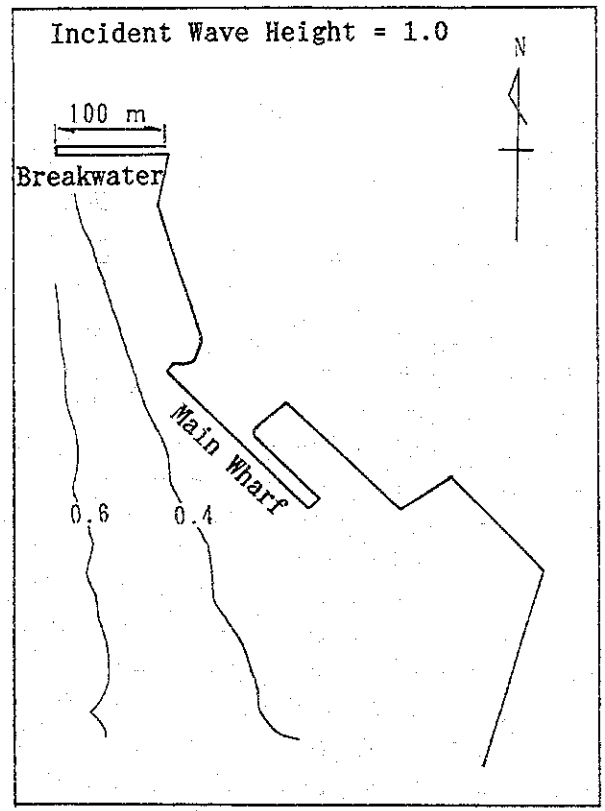


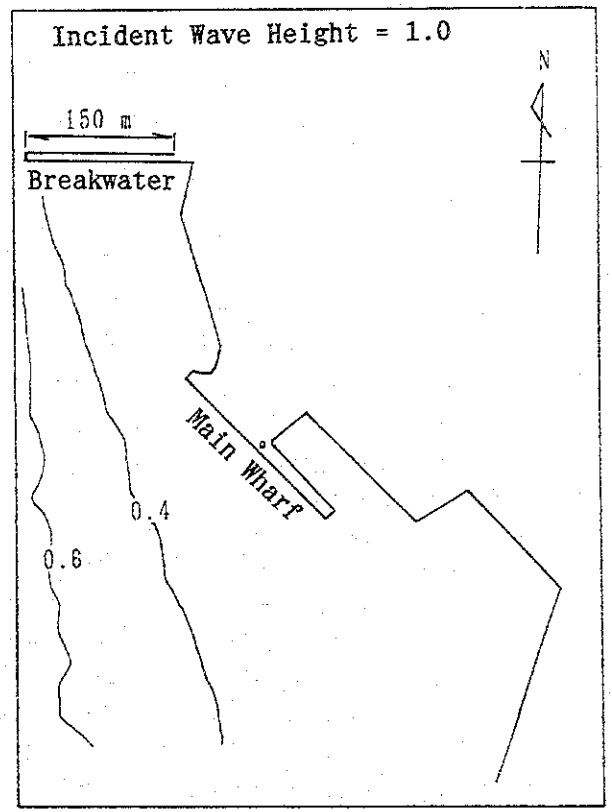
Fig. A-5-10 DISTRIBUTION OF WAVE DIRECTION (APIA BAY AREA)



No.	Case 1
Wave direction	N
Wave Period	8.0(sec)



No.	Case 2
Wave direction	N
Wave Period	12.5(sec)



No.	Case 3
Wave direction	N
Wave Period	12.5(sec)

Fig. A-5-11 WAVE DISTRIBUTION BEHIND THE BREAKWATER

JICA