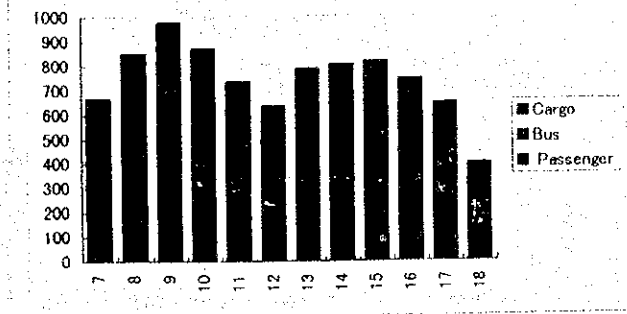
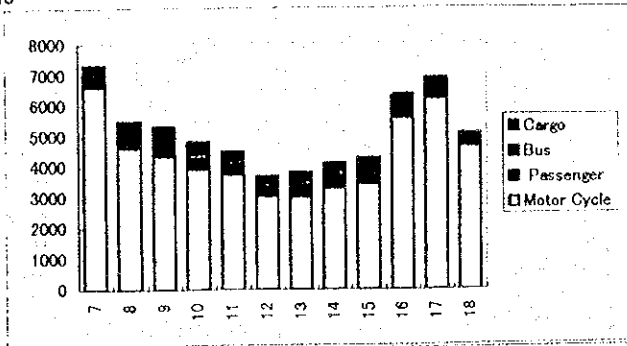


STATION No: 101

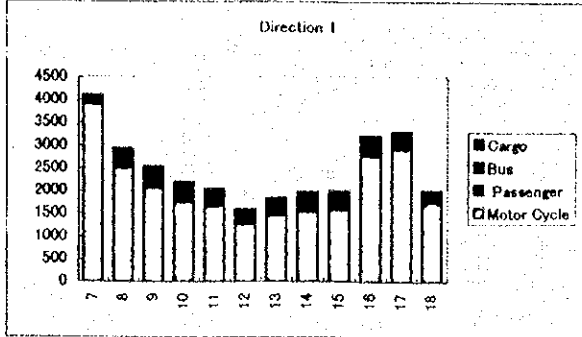
DIRECTION: 1+2 DATE: 7-10

HOUR	Motor Cycle	for Passenger	Bus	for Cargo
7	6654	367	206	92
8	4640	420	306	124
9	4335	395	328	255
10	3940	297	261	311
11	3765	274	224	236
12	3056	218	206	210
13	3033	308	230	246
14	3324	323	242	237
15	3469	307	231	276
16	5609	305	229	210
17	6247	260	196	187
18	4703	134	116	148



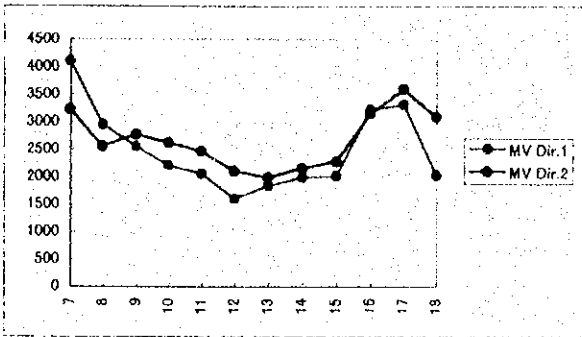
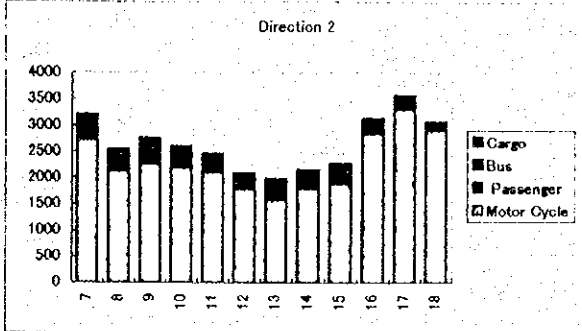
STATION No: 101      DIRECTION : 1      DATE: 7-10

HOUR	Motor Cycle	for Passenges	Bus	for Cargo	MV Dir.1
7	3926	79	64	32	4101
8	2510	173	177	83	2943
9	2066	172	166	146	2550
10	1742	145	146	166	2199
11	1663	134	121	127	2045
12	1270	116	95	117	1598
13	1452	144	95	143	1834
14	1534	167	121	156	1978
15	1580	174	106	145	2005
16	2759	175	141	139	3214
17	2926	142	107	134	3309
18	1774	51	64	126	2015



STATION No: 101      DIRECTION : 2      DATE: 7-10

HOUR	Motor Cycle	for Passenges	Bus	for Cargo	MV Dir.2
7	2728	288	142	60	3218
8	2130	247	129	41	2547
9	2269	223	162	109	2763
10	2198	152	115	145	2610
11	2102	140	103	109	2454
12	1786	102	111	93	2092
13	1581	164	135	103	1963
14	1790	156	121	81	2148
15	1889	133	125	131	2278
16	2850	130	88	71	3139
17	3321	118	89	53	3581
18	2929	83	52	22	3066

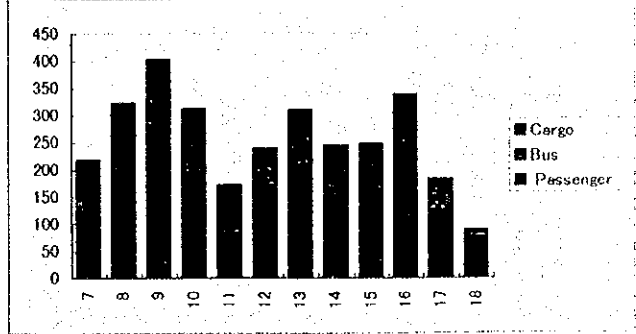
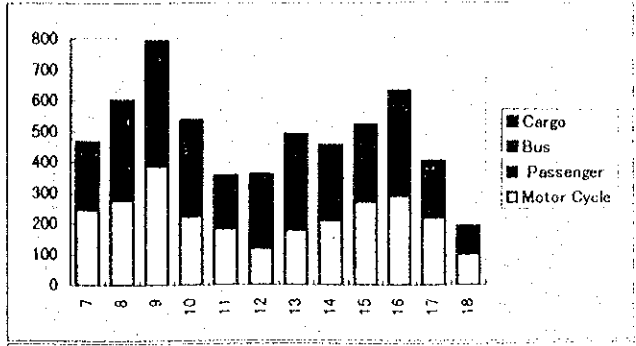


STATION No: 102

DIRECTION: 1+2

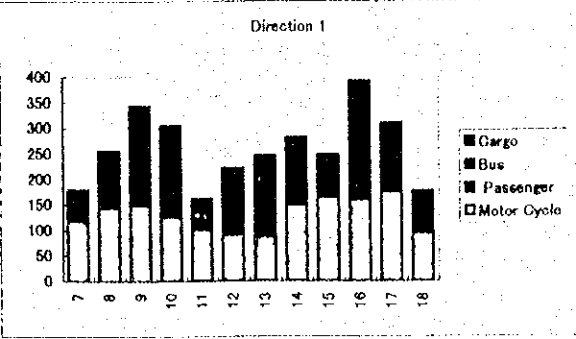
DATE: 7-10

HOUR	Motor Cycle	for Passenger	Bus	for Cargo
7	248	120	89	9
8	279	229	71	23
9	339	276	90	38
10	225	194	79	39
11	186	82	48	41
12	122	169	42	28
13	182	207	59	44
14	214	164	51	29
15	276	163	55	30
16	293	246	60	33
17	221	123	49	11
18	103	74	11	4



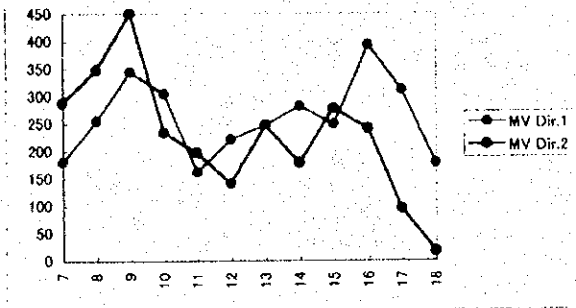
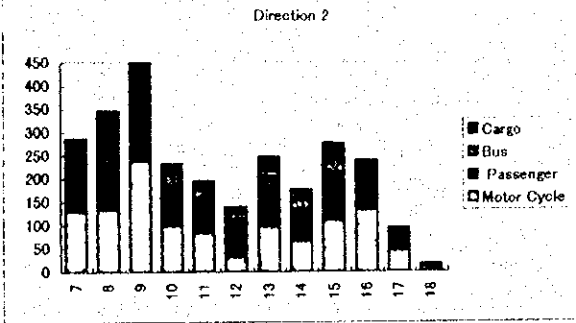
STATION No: 102      DIRECTION : 1      DATE: 7-10

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	118	41	20	0	179
8	145	78	25	7	255
9	149	138	38	18	343
10	126	112	46	20	304
11	102	14	22	23	161
12	91	89	28	13	221
13	86	101	40	19	246
14	149	99	25	8	281
15	165	65	12	6	248
16	160	156	52	24	392
17	176	83	40	11	310
18	95	67	10	4	176



STATION No: 102      DIRECTION : 2      DATE: 7-10

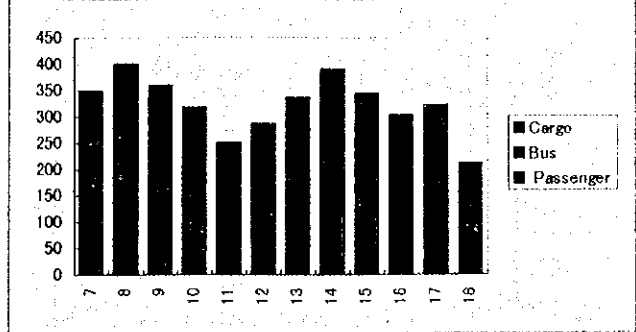
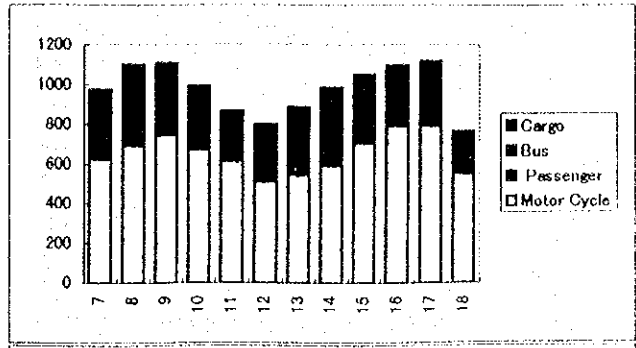
HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	130	79	69	9	287
8	134	151	46	16	347
9	240	138	52	20	450
10	99	82	33	19	233
11	84	68	26	18	196
12	31	80	14	15	140
13	96	108	19	25	246
14	65	65	26	21	177
15	111	98	43	24	276
16	133	90	8	9	240
17	45	40	9	0	94
18	8	7	1	0	16



STATION No: 103

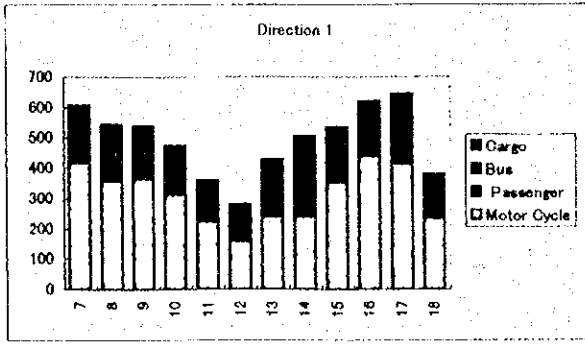
DIRECTION: 1+2 DATE: 7-10

HOUR	Motor Cycle	for Passenger	Bus	for Cargo
7	626	162	95	91
8	698	177	91	133
9	750	152	88	119
10	676	74	83	160
11	616	85	56	108
12	510	101	65	121
13	548	131	63	142
14	594	117	131	143
15	707	126	65	153
16	794	111	78	115
17	797	113	68	140
18	556	75	24	112



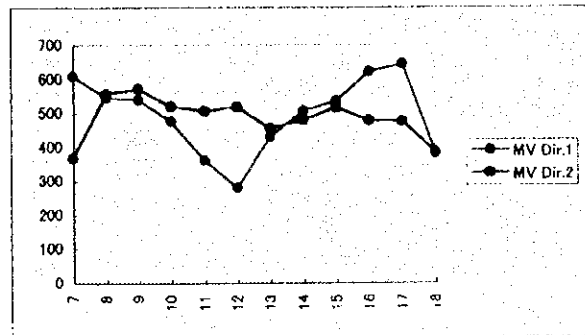
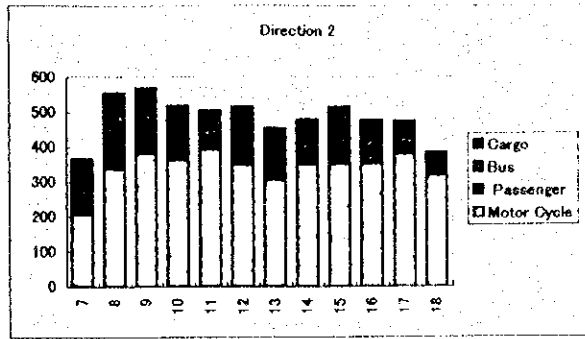
STATION No: 103      DIRECTION : 1      DATE: 7-10

HOUR	Motor Cycle	for Passenger	for Bus	for Cargo	MV Dir.1
7	419	92	41	56	608
8	360	75	33	76	544
9	368	64	46	61	539
10	313	46	39	76	474
11	224	59	21	56	360
12	161	45	22	52	280
13	241	88	38	63	430
14	242	80	106	78	506
15	355	68	37	75	535
16	441	74	37	68	620
17	416	89	39	100	644
18	236	44	18	84	382



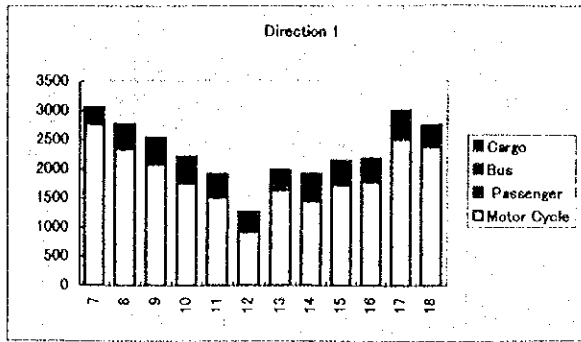
STATION No: 103      DIRECTION : 2      DATE: 7-10

HOUR	Motor Cycle	for Passenger	for Bus	for Cargo	MV Dir.2
7	207	70	54	35	366
8	338	102	58	57	555
9	382	88	42	58	570
10	363	28	44	84	519
11	392	26	35	52	506
12	349	56	43	69	517
13	307	43	25	78	454
14	352	37	25	65	479
15	352	58	28	78	516
16	353	37	41	47	478
17	381	24	29	40	474
18	320	31	6	28	385



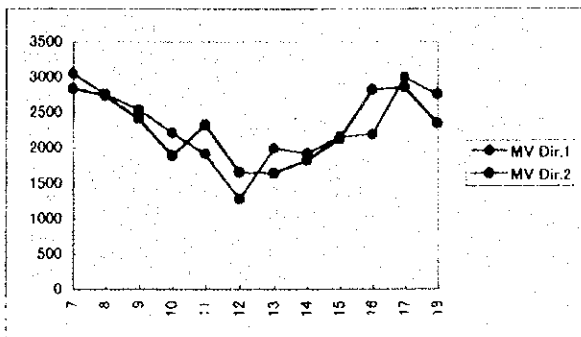
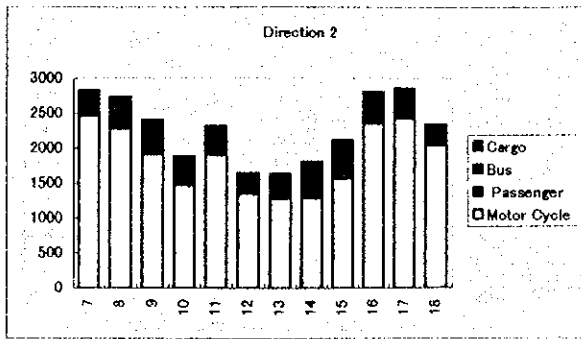
STATION No: 201      DIRECTION : 1      DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	2782	152	49	64	3047
8	2351	215	70	126	2762
9	2084	167	65	224	2540
10	1767	169	70	203	2209
11	1514	136	58	197	1905
12	923	126	47	177	1273
13	1637	147	46	159	1989
14	1458	203	52	200	1913
15	1734	183	47	186	2150
16	1793	189	62	139	2183
17	2511	245	65	176	2997
18	2378	141	34	195	2748



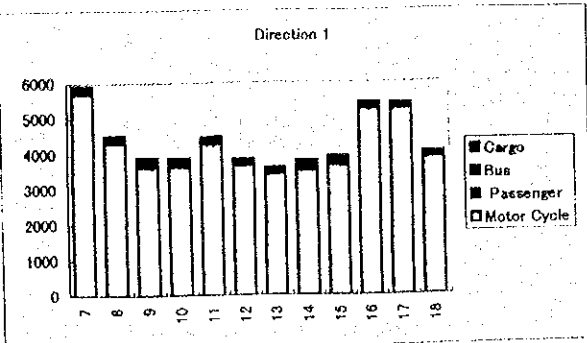
STATION No: 201      DIRECTION : 2      DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	2476	162	96	98	2832
8	2288	243	76	133	2740
9	1918	172	69	251	2410
10	1484	150	58	195	1887
11	1912	143	60	209	2324
12	1360	105	50	135	1650
13	1287	149	70	127	1633
14	1299	224	48	246	1817
15	1582	157	65	313	2117
16	2367	151	67	232	2817
17	2437	172	53	194	2856
18	2054	96	40	150	2340



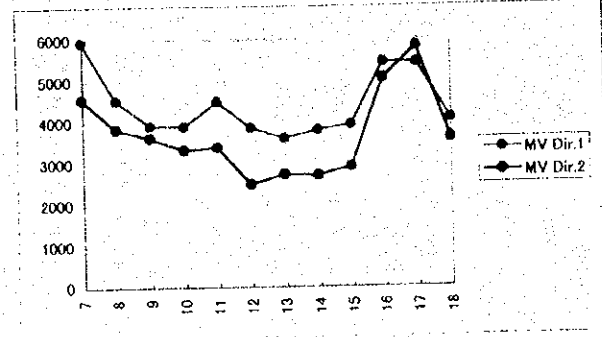
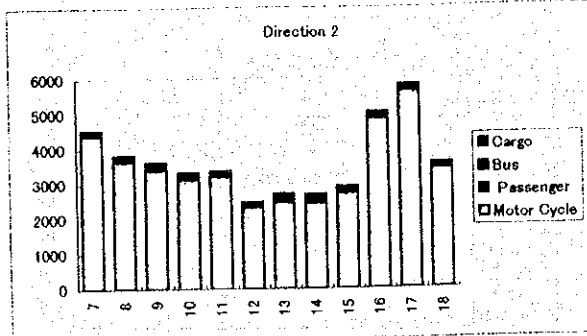
STATION No: 203 DIRECTION 1 DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	5717	156	59	0	5932
8	4320	139	58	15	4532
9	3642	127	41	96	3906
10	3634	143	50	58	3885
11	4288	101	32	64	4485
12	3688	84	25	58	3855
13	3426	83	37	57	3603
14	3513	160	54	68	3795
15	3671	140	52	56	3919
16	5258	111	50	12	5431
17	5254	103	49	7	5413
18	3895	88	42	20	4045



STATION No: 203 DIRECTION 2 DATE: 17-9

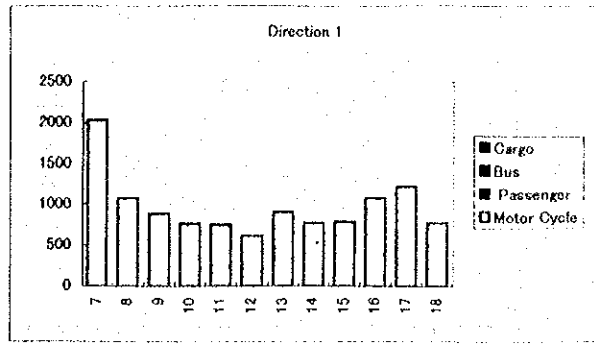
HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	4410	109	29	2	4550
8	3660	130	36	4	3830
9	3410	131	20	45	3606
10	3130	113	21	61	3325
11	3224	95	21	44	3384
12	2335	75	26	43	2479
13	2482	163	32	40	2717
14	2453	142	49	42	2686
15	2733	117	22	36	2908
16	4862	145	26	9	5042
17	5639	129	32	15	5815
18	3421	100	7	41	3569





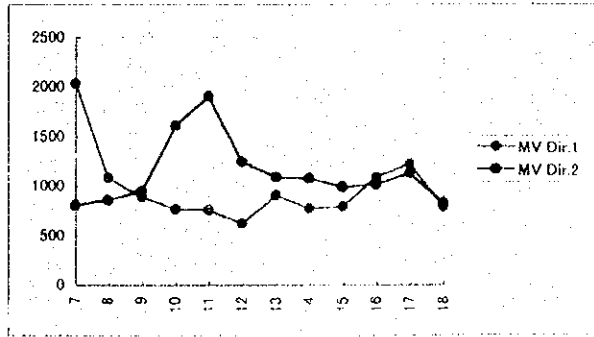
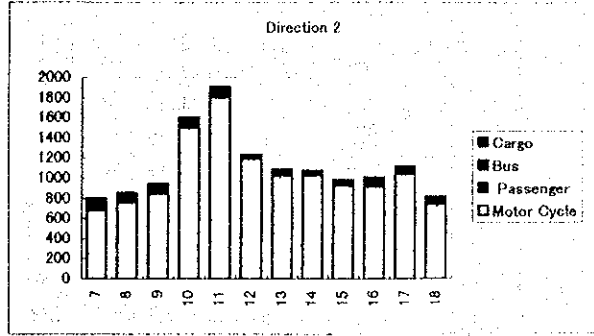
STATION No: 204 DIRECTION : 1 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir. 1
7	2033	0	0	0	2033
8	1082	0	0	0	1082
9	887	0	0	0	887
10	763	0	0	0	763
11	753	0	0	0	753
12	617	0	0	0	617
13	903	0	0	0	903
14	769	0	0	0	769
15	790	0	0	0	790
16	1087	0	0	0	1087
17	1221	0	0	0	1221
18	779	0	0	0	779



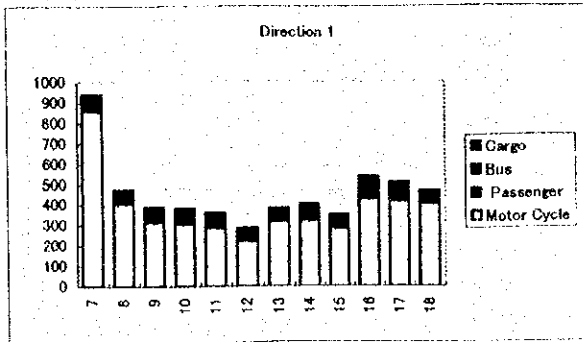
STATION No: 204 DIRECTION : 2 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir. 2
7	683	98	15	4	800
8	767	72	14	3	856
9	849	60	15	18	942
10	1506	64	16	21	1607
11	1806	66	12	21	1905
12	1195	32	5	8	1240
13	1033	48	2	3	1086
14	1032	31	2	12	1077
15	931	40	9	7	987
16	922	74	10	5	1011
17	1047	67	4	3	1121
18	747	50	6	19	822



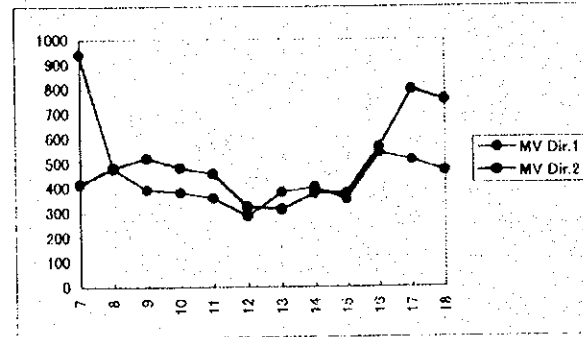
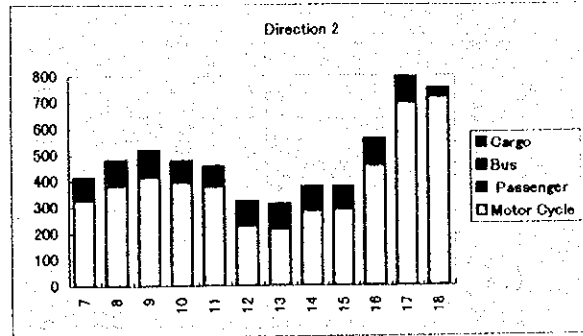
STATION No: 205 DIRECTION : 1 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	865	41	12	22	940
8	410	26	7	32	475
9	320	32	3	36	391
10	306	36	5	35	382
11	289	35	0	35	359
12	226	39	0	21	286
13	319	36	6	21	382
14	325	43	3	32	403
15	287	29	2	33	351
16	431	48	5	56	540
17	420	53	5	34	512
18	406	37	1	23	467



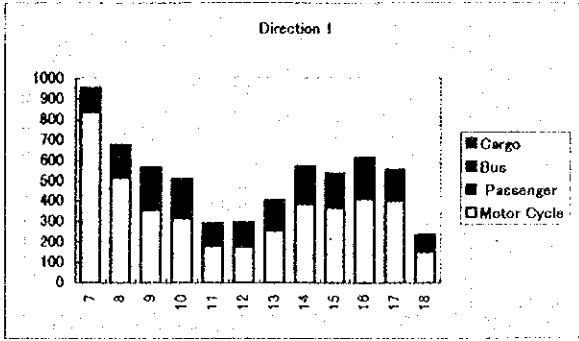
STATION No: 205 DIRECTION : 2 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	330	43	13	28	414
8	384	46	8	43	481
9	420	49	6	45	520
10	398	44	4	34	480
11	383	32	10	32	457
12	231	46	16	29	322
13	218	49	5	40	312
14	289	45	5	39	378
15	294	41	3	40	378
16	481	56	8	37	562
17	703	52	5	37	797
18	723	10	2	20	755



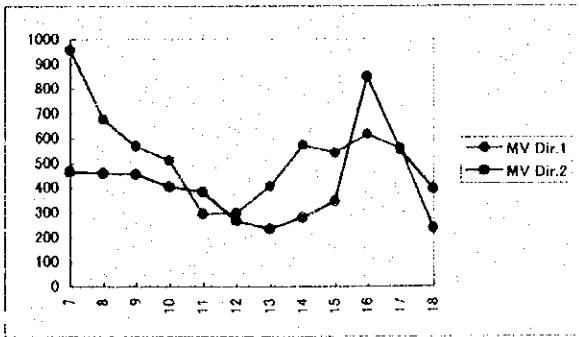
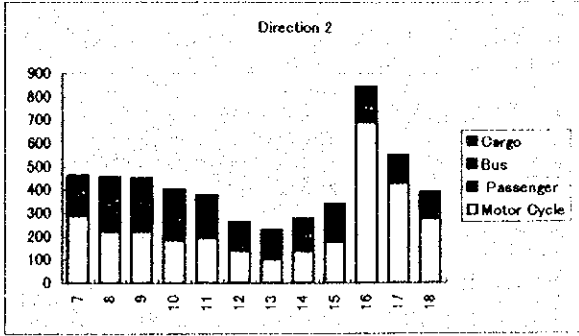
STATION No: 206 DIRECTION: 1 DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir. 1
7	840	46	43	28	957
8	520	62	35	58	675
9	361	72	43	89	565
10	320	54	43	92	509
11	185	36	5	66	292
12	181	33	7	74	295
13	259	31	20	94	404
14	387	52	29	102	570
15	371	55	28	84	538
16	415	75	34	91	615
17	407	45	29	74	555
18	153	32	14	36	235



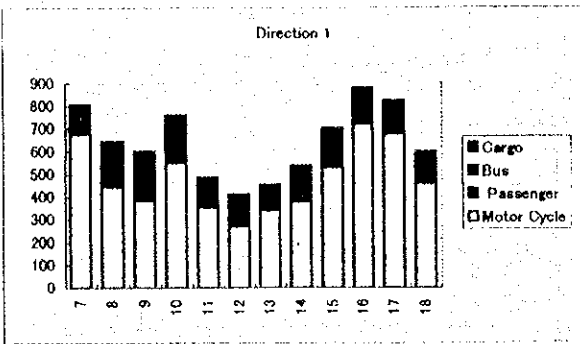
STATION No: 206 DIRECTION: 2 DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir. 2
7	291	69	42	62	464
8	225	93	51	87	456
9	224	96	41	92	453
10	189	51	56	107	403
11	197	58	29	97	381
12	141	40	13	71	265
13	106	43	21	61	231
14	142	46	31	58	277
15	179	52	20	92	343
16	694	48	25	80	847
17	431	39	20	61	551
18	279	35	18	63	395



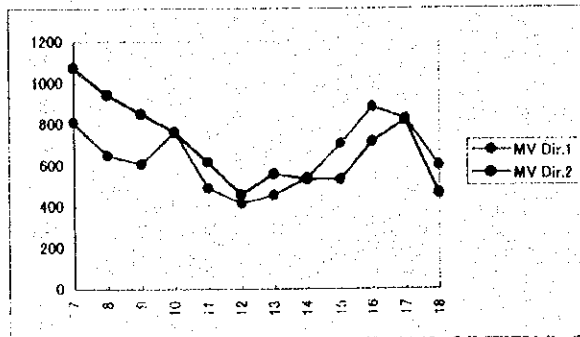
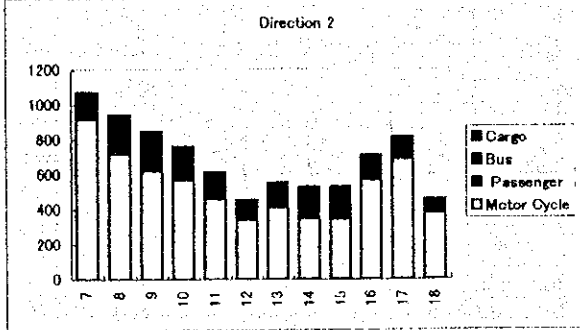
STATION No: 207 DIRECTION : 1 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	680	31	22	75	808
8	450	51	28	117	646
9	388	36	27	153	604
10	555	34	14	159	762
11	359	14	9	107	489
12	276	15	15	106	412
13	343	9	11	91	454
14	379	24	12	122	537
15	535	22	7	138	702
16	727	28	11	115	881
17	683	25	11	105	824
18	461	28	17	90	596



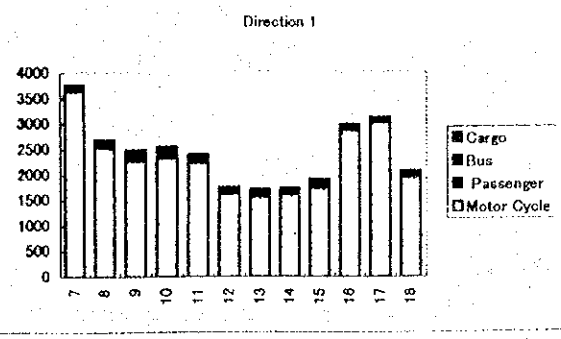
STATION No: 207 DIRECTION : 2 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	921	27	30	94	1072
8	723	25	25	168	941
9	626	25	17	181	849
10	572	29	14	146	761
11	464	19	8	124	615
12	344	12	12	88	456
13	411	15	16	114	556
14	348	30	13	137	528
15	347	23	13	146	529
16	574	19	16	102	711
17	693	23	7	93	816
18	363	12	3	63	461



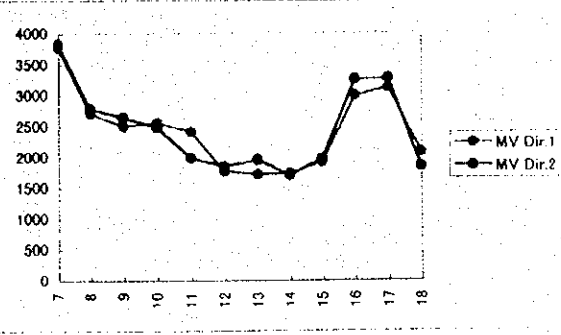
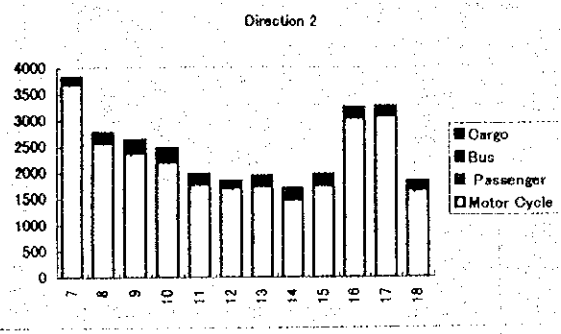
STATION No: 208      DIRECTION : 1      DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	3640	74	9	42	3765
8	2542	91	13	53	2699
9	2268	112	13	99	2492
10	2336	80	11	122	2549
11	2232	73	6	84	2395
12	1631	47	4	81	1763
13	1568	70	14	58	1710
14	1614	43	7	63	1727
15	1753	68	19	76	1916
16	2877	65	10	35	2967
17	3024	42	10	38	3114
18	1960	41	9	64	2074



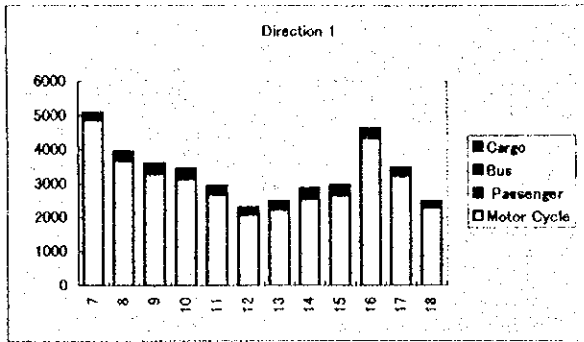
STATION No: 208      DIRECTION : 2      DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	3693	92	8	33	3826
8	2581	118	2	76	2777
9	2382	139	3	108	2632
10	2211	125	1	137	2474
11	1779	89	1	111	1980
12	1708	48	8	75	1839
13	1740	91	0	113	1944
14	1484	95	0	114	1693
15	1750	106	0	107	1963
16	3048	127	3	64	3242
17	3069	94	0	78	3261
18	1671	63	1	98	1833



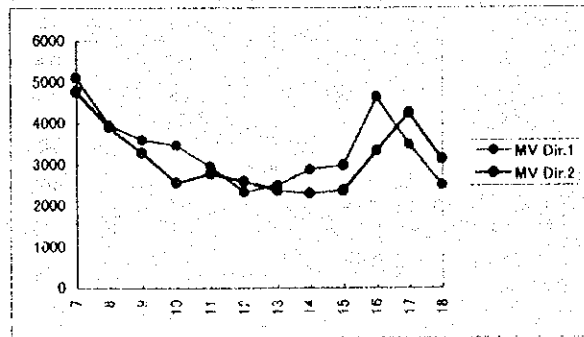
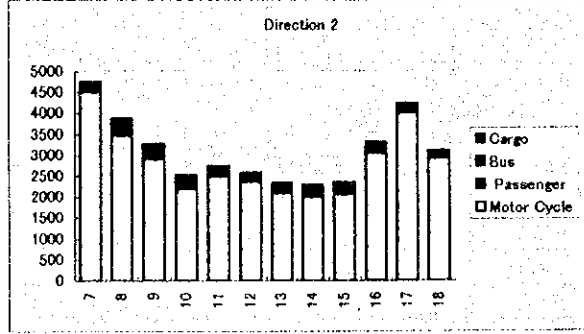
STATION No: 209      DIRECTION : 1      DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	4995	146	39	13	5093
8	3681	167	43	55	3946
9	3313	154	38	84	3589
10	3148	157	45	97	3447
11	2703	133	41	71	2948
12	2119	93	35	63	2310
13	2247	133	36	76	2492
14	2556	180	47	81	2864
15	2684	168	35	78	2965
16	4370	150	52	60	4632
17	3251	118	40	57	3466
18	2309	77	21	84	2491



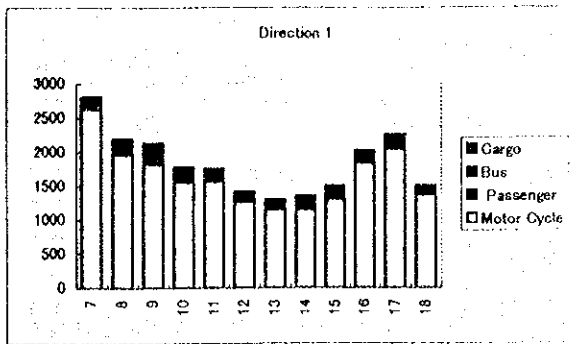
STATION No: 209      DIRECTION : 2      DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	4510	171	39	49	4769
8	3485	287	57	54	3883
9	2925	208	46	93	3272
10	2218	177	37	109	2541
11	2500	142	27	82	2751
12	2390	84	25	83	2582
13	2105	131	30	80	2346
14	2010	143	39	92	2284
15	2075	151	38	86	2350
16	3060	141	45	72	3318
17	4030	122	42	45	4239
18	2945	108	13	59	3125



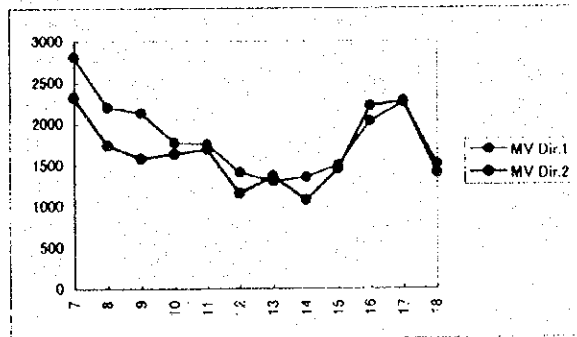
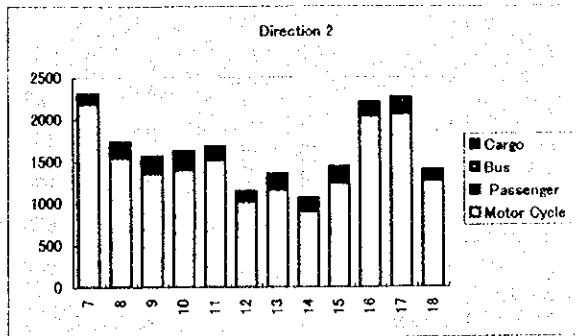
STATION No: 210 DIRECTION : 1 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	2639	90	35	44	2808
8	1967	113	24	89	2193
9	1829	126	39	130	2124
10	1560	78	18	116	1770
11	1575	59	10	106	1750
12	1276	42	15	78	1411
13	1153	65	13	65	1296
14	1158	60	28	102	1348
15	1313	85	18	80	1496
16	1845	64	28	66	2023
17	2053	94	43	61	2251
18	1303	50	13	56	1502



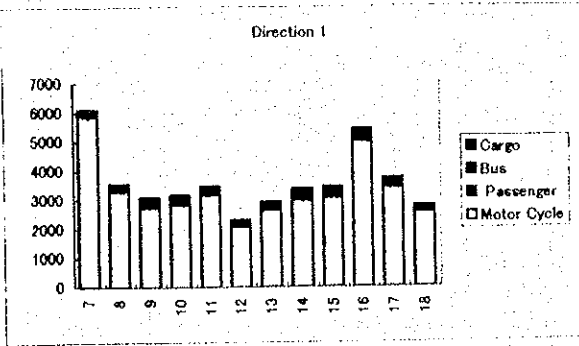
STATION No: 210 DIRECTION : 2 DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	2196	78	11	27	2312
8	1549	88	37	63	1737
9	1370	99	17	84	1570
10	1407	95	17	111	1630
11	1523	67	5	90	1685
12	1025	42	19	67	1153
13	1169	85	26	77	1357
14	905	77	15	72	1069
15	1249	67	34	94	1444
16	2044	73	18	71	2206
17	2075	74	31	87	2267
18	1274	38	16	69	1397



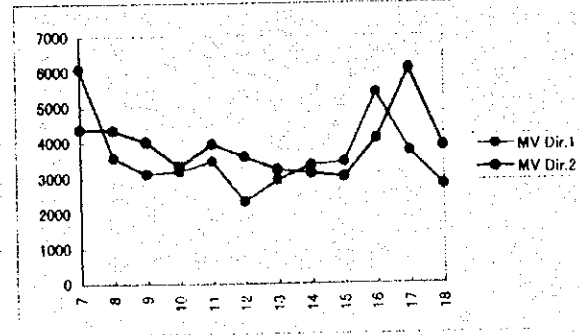
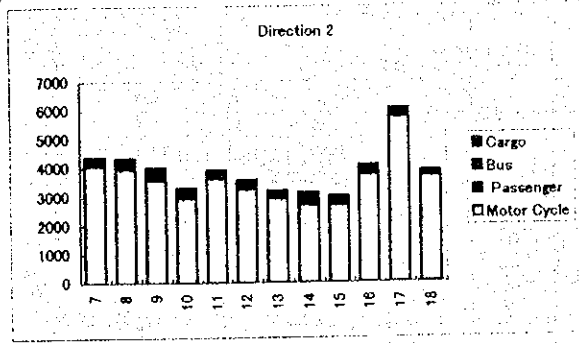
STATION No. 211 DIRECTION : 1 DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	5889	140	43	24	6096
8	3319	188	40	37	3564
9	2767	235	39	57	3098
10	2865	159	50	94	3168
11	3190	157	37	68	3452
12	2080	112	50	63	2305
13	2626	189	49	56	2920
14	2989	229	69	64	3351
15	3069	214	72	77	3432
16	5009	244	80	57	5390
17	3397	183	75	73	3728
18	2576	103	39	57	2775



STATION No: 211 DIRECTION : 2 DATE: 17-9

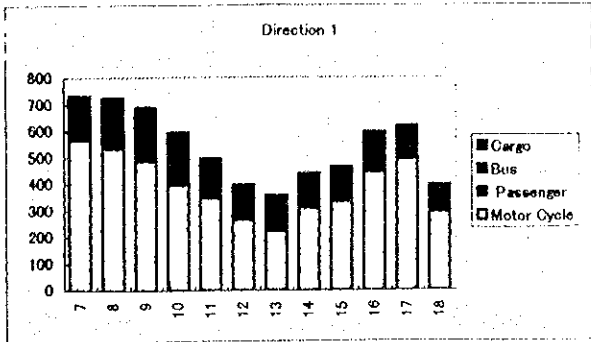
HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	4097	159	96	25	4377
8	3986	230	69	58	4343
9	3592	216	67	127	4002
10	2962	171	47	120	3300
11	3646	135	45	107	3933
12	3275	162	70	70	3577
13	2948	127	59	77	3211
14	2724	212	71	109	3116
15	2700	157	65	92	3014
16	3769	168	82	63	4082
17	5756	179	77	41	6053
18	3683	88	33	52	3856





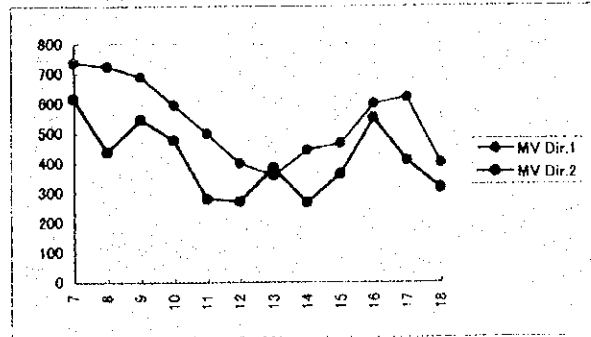
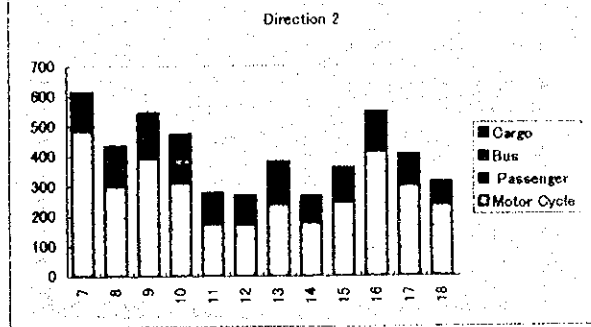
STATION No: 212 DIRECTION : 1 DATE: 22-9

HOUR	Motor Cycle	for Passengers	Bus	for Cargo	MV Dir.1
7	569	94	4	68	735
8	534	111	0	79	724
9	487	101	2	99	689
10	398	97	4	95	594
11	346	63	3	85	497
12	268	71	7	53	399
13	226	58	0	74	358
14	310	67	0	65	442
15	337	63	0	66	466
16	448	58	0	92	598
17	495	57	0	67	619
18	298	52	1	48	399



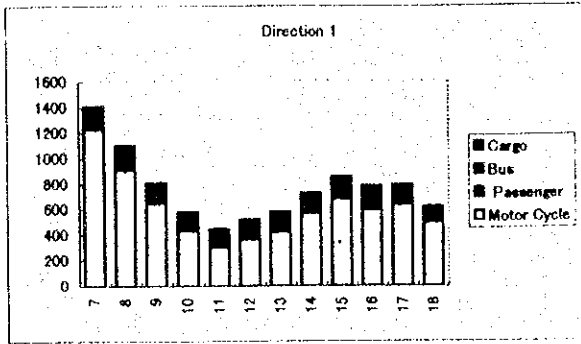
STATION No: 212 DIRECTION : 2 DATE: 22-9

HOUR	Motor Cycle	for Passengers	Bus	for Cargo	MV Dir.2
7	486	68	12	50	616
8	302	58	19	56	435
9	396	72	21	57	546
10	311	57	31	76	475
11	175	42	11	50	278
12	172	47	6	45	270
13	240	46	18	79	383
14	180	31	8	48	267
15	248	33	13	68	363
16	417	46	12	74	549
17	305	19	13	71	408
18	238	16	11	51	316



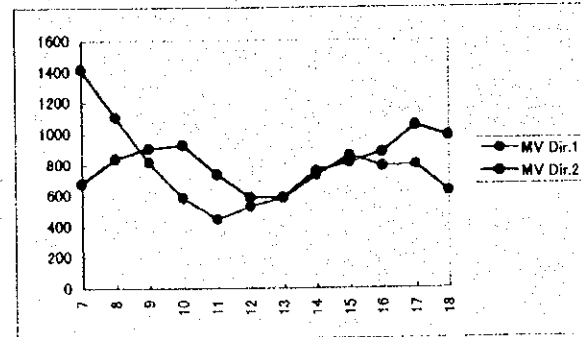
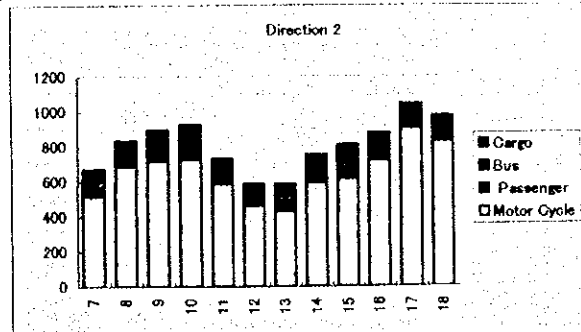
STATION No: 213      DIRECTION : 1      DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	1238	62	49	63	1412
8	917	78	40	68	1103
9	652	43	31	85	811
10	442	43	23	71	579
11	308	30	25	81	444
12	369	50	17	86	522
13	427	48	16	89	580
14	571	61	22	73	727
15	686	61	17	92	856
16	606	63	27	90	786
17	641	38	25	90	794
18	502	42	9	70	623



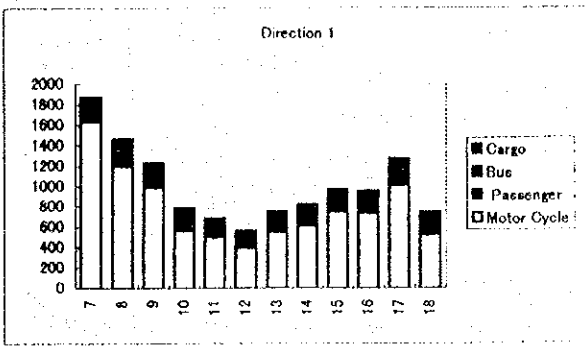
STATION No: 213      DIRECTION : 2      DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	520	45	37	71	673
8	690	53	29	62	834
9	723	64	42	69	898
10	728	48	34	114	924
11	592	35	26	77	730
12	465	25	20	75	585
13	437	50	38	60	585
14	598	53	21	82	754
15	622	54	39	98	813
16	724	50	27	76	877
17	910	49	23	84	1046
18	834	65	20	61	980



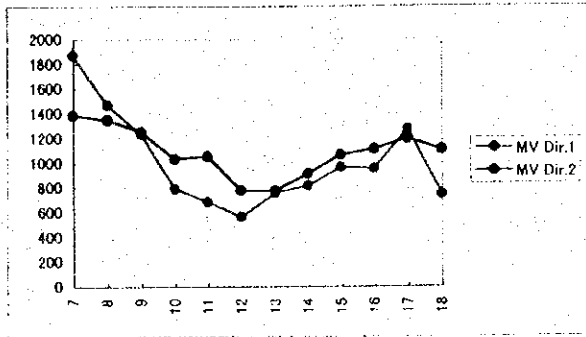
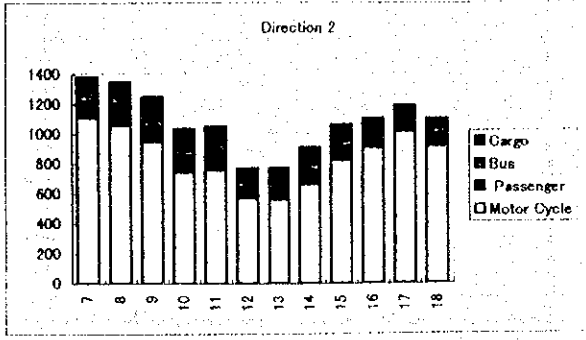
STATION No: 214      DIRECTION : 1      DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	1642	112	68	48	1870
8	1203	118	75	70	1466
9	990	103	52	82	1227
10	569	67	48	105	789
11	503	71	38	72	684
12	399	56	30	76	561
13	553	79	23	98	753
14	615	70	26	104	815
15	752	80	31	99	962
16	742	104	33	73	952
17	1018	115	55	82	1270
18	527	83	43	91	744



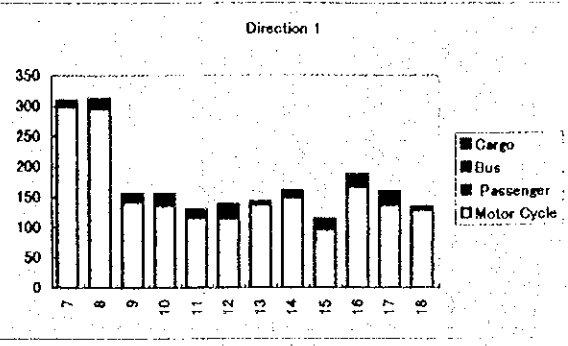
STATION No: 214      DIRECTION : 2      DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	1111	107	79	86	1383
8	1063	130	69	85	1347
9	955	89	60	145	1249
10	750	96	59	128	1033
11	763	123	52	115	1053
12	576	65	40	93	774
13	565	88	37	83	773
14	666	87	45	108	909
15	830	83	45	104	1062
16	914	65	37	89	1105
17	1022	55	37	77	1191
18	919	73	48	63	1103



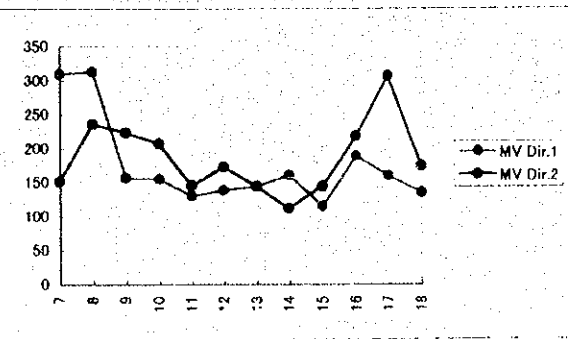
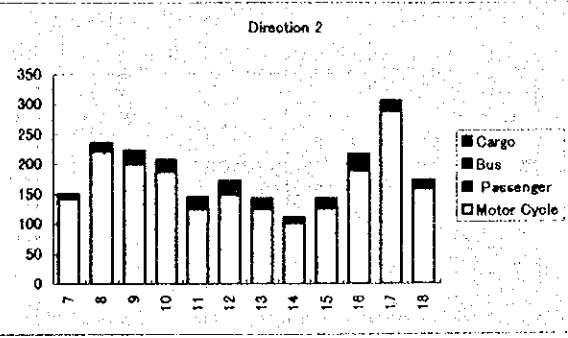
STATION No: 215 DIRECTION : 1 DATE: 19-9

HOUR	Motor Cycle	for Passengers	Bus	for Cargo	MV Dir.1
7	300	4	1	4	309
8	296	3	0	14	313
9	143	4	0	9	156
10	137	1	1	16	155
11	116	1	0	13	130
12	115	5	1	17	138
13	138	2	0	3	143
14	150	5	0	5	160
15	98	6	0	10	114
16	168	8	0	12	188
17	138	5	1	15	159
18	129	1	0	4	134



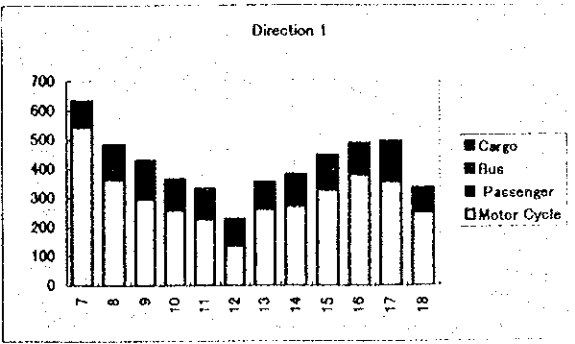
STATION No: 215 DIRECTION : 2 DATE: 19-9

HOUR	Motor Cycle	for Passengers	Bus	for Cargo	MV Dir.2
7	143	2	0	6	151
8	222	5	0	9	236
9	200	13	0	10	223
10	189	5	0	13	207
11	125	5	0	15	145
12	150	7	0	15	172
13	125	3	1	14	143
14	102	5	0	4	111
15	126	3	0	14	143
16	190	4	0	23	217
17	289	6	0	11	306
18	160	2	0	11	173



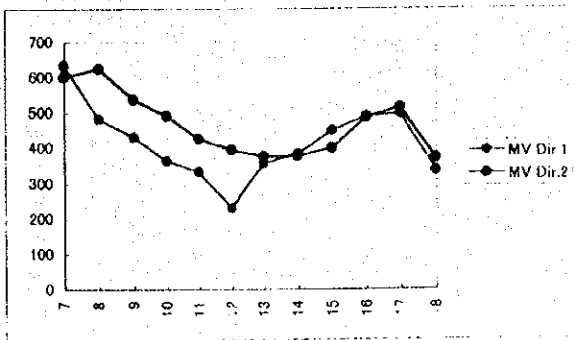
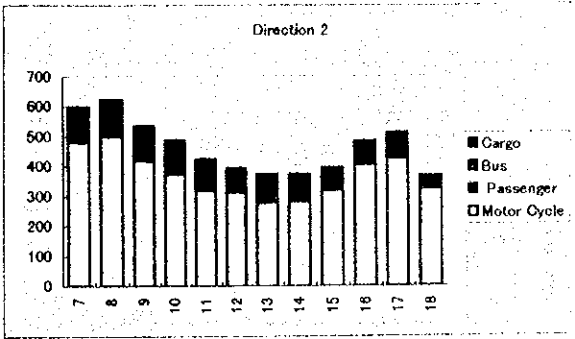
STATION No: 216 DIRECTION : 1 DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	545	41	4	43	633
8	365	43	1	73	482
9	299	51	3	77	430
10	261	33	1	68	363
11	230	35	4	63	332
12	139	27	4	59	229
13	265	48	0	42	355
14	275	45	0	61	381
15	330	54	0	63	447
16	381	43	0	64	488
17	356	63	0	73	494
18	252	34	0	48	334



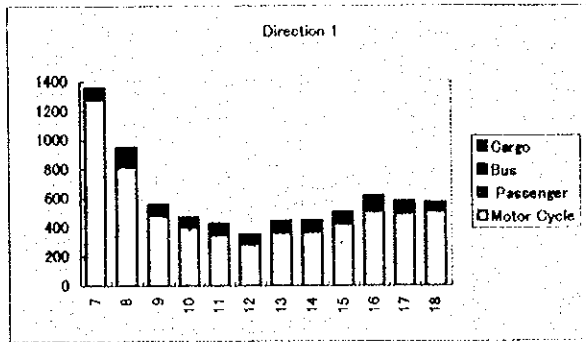
STATION No: 216 DIRECTION : 2 DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	482	46	11	61	600
8	501	47	14	62	624
9	420	38	8	69	535
10	375	39	8	68	490
11	321	35	8	61	425
12	313	25	8	48	394
13	281	31	5	57	374
14	282	26	10	57	375
15	322	23	1	51	397
16	407	21	6	51	485
17	429	20	10	54	513
18	326	13	1	30	370



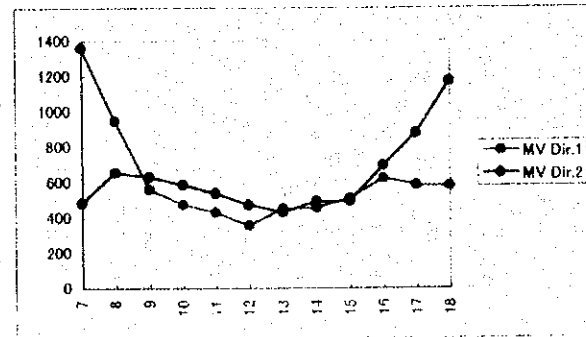
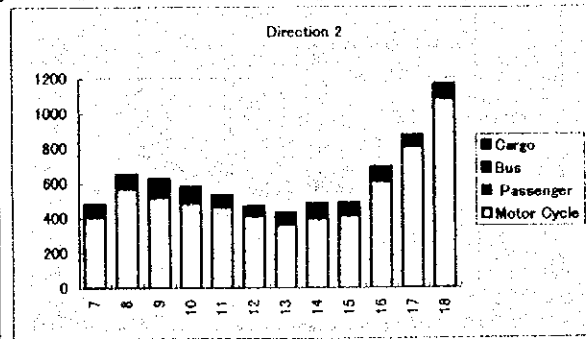
STATION No: 217      DIRECTION : 1      DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	1280	36	17	25	1358
8	822	47	37	43	949
9	485	36	9	29	559
10	403	24	14	32	473
11	355	26	6	41	428
12	294	29	8	22	353
13	366	42	15	25	448
14	376	31	8	36	451
15	428	41	12	26	507
16	516	37	24	43	620
17	495	31	14	40	580
18	519	26	11	18	574



STATION No: 217      DIRECTION : 2      DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	410	44	10	16	480
8	574	43	19	19	655
9	521	48	15	44	628
10	490	47	14	32	583
11	470	27	9	29	535
12	414	23	9	23	469
13	365	22	9	33	429
14	400	34	12	41	487
15	414	32	12	31	489
16	612	36	20	25	693
17	810	36	12	16	874
18	1088	40	9	32	1169



FORM A: TRAFFIC VOLUME COUNT SURVEY, F/S ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION : 1 DATE: 17-9 (Wed)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	8124	50	8551	222	523	38	45	25	9			17587	
8 -	4588	112	6430	208	334	40	11	8	7	5		11743	
9 -	2611	67	4809	179	251	29	3	71	23	2		8049	
10 -	1054	71	3966	161	218	43	7	71	11	1		5603	
11 -	1357	71	3050	135	252	55	22	76	13			5031	
12 -	1093	76	2309	72	70	23	12	23	15			3693	
13 -	1258	56	4200	139	100	27	11	32	10			5832	
14 -	1197	58	7024	118	103	33	9	72	10	3		8627	
15 -	1433	46	3818	172	70	23	11	55	7	1		5636	
16 -	2102	56	2691	139	63	21	24	10				5108	
17 -	6060	54	4351	152	60	13	21	16	5			10732	
18 -	1429	42	3645	110	35	24	9	29	6	3		5332	
total	32306	759	54844	1806	2079	369	185	488	116	15		92967	

STATION No: 202 DIRECTION : 2 DATE: 17-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1858	33	4407	198	90	28	27	4		1		6646	
8 -	1184	67	3748	188	106	43	25	18	3		1	5383	
9 -	1158	70	3642	172	96	45	12	81	4			5280	
10 -	1257	75	3452	158	72	44	17	81	15	1		5172	
11 -	1463	65	2918	128	72	28	15	56	10	1		4756	
12 -	1463	48	2714	72	54	16	12	28	21			4428	
13 -	992	72	2439	129	77	37	14	41	10	2		3813	
14 -	897	52	3028	137	80	26	15	38	26	6		4305	
15 -	1054	69	3683	148	61	27	16	69	20	2		5149	
16 -	1953	70	6049	149	61	33	32	14	10			8371	
17 -	3308	58	9761	141	63	50	19	9	1			13410	
18 -	1690	49	4042	97	54	32	2	30	15	5		6016	
total	18277	728	49883	1717	886	409	206	469	135	18	1	72729	

STATION No: 202 DIRECTION : 1+2 DATE: 17-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	9982	83	12958	420	613	66	72	29	9	1		24233	
8 -	5772	179	10178	396	440	83	36	26	10	5	1	17126	
9 -	3769	137	8451	351	347	74	15	152	27	2		13325	
10 -	2311	146	7418	319	290	87	24	152	26	2		10775	
11 -	2820	136	5968	263	324	83	37	132	23	1		9787	
12 -	2556	124	5023	144	124	39	24	51	36			8121	
13 -	2250	128	6639	267	177	64	25	73	20	2		9645	
14 -	2094	110	10052	255	183	59	24	110	36	9		12932	
15 -	2487	115	7501	320	131	50	27	124	27	3		10785	
16 -	4055	126	8740	288	124	54	56	24	10			13477	
17 -	9368	112	14112	293	123	63	40	25	6			24142	
18 -	3119	91	7687	200	89	56	11	59	21	8		11348	
total	50583	1487	104727	3523	2965	778	391	957	251	33	1	165696	

FORM A: TRAFFIC VOLUME COUNT SURVEY, F/S ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION: 1 DATE: 18-9 (Thu)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	8499	61	9674	198	126	28	22	7				18615	
8 -	3409	96	5181	137	117	26	13	21	4			9004	
9 -	1345	80	3880	160	73	27	11	88	7	1		5672	
10 -	1369	88	4059	148	87	22	17	76	12	1		5879	
11 -	1501	57	4604	126	78	26	10	62	17			6481	
12 -	1235	50	3566	102	47	16	11	32	7			5066	
13 -	943	47	4884	114	56	32	15	32	10	3		6136	
14 -	1291	53	4438	127	84	20	16	64	10	3		6106	
15 -	1734	51	3667	133	71	17	8	36	7	1		5725	
16 -	2009	58	4789	147	57	44	6	12	5	2		7129	
17 -	4065	73	4999	137	55	27	10	22	7			9395	
18 -	566	46	5128	107	35	23	2	62	20	3		5992	
total	27966	760	58869	1636	886	308	141	514	106	14		91200	

STATION No: 202 DIRECTION: 2 DATE: 18-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1429	47	4540	154	108	24	16	6	2	2		6328	
8 -	968	65	4107	143	103	36	19	14	4	1		5460	
9 -	746	50	4046	71	103	24	18	100	25	1		5184	
10 -	1079	87	3464	141	107	42	13	77	33			5043	
11 -	1500	61	3840	89	64	21	23	64	7			5669	
12 -	1148	38	2889	52	57	18	9	32	11	2		4256	
13 -	950	49	2505	102	51	24	18	43	14	2		3758	
14 -	986	42	2829	155	51	36	13	67	12	1		4192	
15 -	1156	62	3336	137	53	24	10	76	14	1		4869	
16 -	2154	29	6174	169	65	42	20	12	1			8666	
17 -	3203	86	6313	141	78	21	7	12	2			9843	
18 -	2297	67	4641	82	53	18	5	52	11	2		7228	
total	17616	663	48684	1436	893	330	171	555	136	12		70496	

STATION No: 202 DIRECTION: 1+2 DATE: 18-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	9928	108	14214	352	234	52	38	13	2	2		24943	
8 -	4377	161	9289	280	220	62	32	35	8	1		14464	
9 -	2091	130	7926	231	176	51	29	188	32	2		10856	
10 -	2448	175	7523	289	194	64	30	153	45	1		10922	
11 -	3001	118	8444	215	142	47	33	126	24			12150	
12 -	2383	88	6455	154	104	34	20	64	18	2		9322	
13 -	1893	96	7389	216	107	56	33	75	24	5		9894	
14 -	2277	95	7267	282	135	56	29	131	22	4		10298	
15 -	2890	113	7003	270	124	41	18	112	21	2		10594	
16 -	4163	87	10963	316	122	86	26	24	6	2		15795	
17 -	7268	139	11312	278	133	48	17	34	9			19238	
18 -	6683	113	9769	189	88	41	7	114	31	5		13220	
total	45582	1423	107553	3072	1779	638	312	1069	242	26		161696	



FORM A: TRAFFIC VOLUME COUNT SURVEY, F/S ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION : 1 DATE: 19-9 (Fri)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	7896	69	10457	178	104	25	19	1	0	0	0	18749	0
8 -	4298	69	6863	205	131	25	13	26	2	1	0	11633	0
9 -	1463	77	4827	162	118	30	10	80	5	4	1	6777	0
10 -	1177	75	4629	145	98	31	12	66	20	1	0	6254	0
11 -	2652	50	3645	106	94	25	17	58	21	0	0	6668	0
12 -	1533	33	2850	87	38	25	9	24	12	0	1	4612	0
13 -	1322	47	3494	100	91	39	15	32	10	0	0	5150	0
14 -	1168	54	3828	107	59	23	9	64	12	2	1	5327	0
15 -	1623	67	3305	132	73	19	11	42	8	1	0	5281	0
16 -	5598	71	5710	160	81	34	31	8	2	0	0	11695	0
17 -	3693	56	4374	146	75	28	14	29	3	2	1	8421	0
18 -	1017	40	4557	88	57	26	8	40	14	7	0	5854	0
total	33440	708	58539	1616	1019	330	168	470	109	18	4	96421	0

STATION No: 202 DIRECTION : 2 DATE: 19-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1548	35	4876	126	92	31	17	6	0	0	0	6731	0
8 -	1232	53	4727	170	99	55	17	10	5	0	0	6368	0
9 -	1075	65	3484	138	79	26	15	62	31	1	0	4976	0
10 -	1293	76	3785	130	60	23	14	52	28	3	0	5464	0
11 -	1702	90	4101	135	70	20	11	63	11	3	0	6206	0
12 -	1271	37	3335	89	51	22	13	44	16	0	0	4872	0
13 -	1202	57	2595	139	72	33	10	37	15	1	0	4261	0
14 -	1264	62	3526	202	75	29	10	48	17	0	1	5234	0
15 -	1405	58	3174	95	69	22	11	62	8	0	0	4904	0
16 -	2505	46	6019	154	53	36	19	12	3	0	0	8847	0
17 -	3944	73	6994	157	85	29	6	9	2	0	0	11299	0
18 -	3203	40	4569	90	55	20	3	76	17	2	0	8075	0
total	21644	692	51285	1625	860	345	146	481	153	10	1	77243	0

STATION No: 202 DIRECTION : 1+2 DATE: 19-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	9444	104	15333	304	196	56	36	7	0	0	0	25480	0
8 -	5530	122	11590	375	230	80	30	36	7	1	0	18001	0
9 -	2538	142	8311	300	197	56	25	142	36	5	1	11753	0
10 -	2470	151	8414	275	158	54	26	118	48	4	0	11718	0
11 -	4354	140	7746	241	164	45	28	121	32	3	0	12874	0
12 -	2804	70	6185	176	89	47	22	68	28	0	1	9450	0
13 -	2524	104	6189	239	163	72	25	69	25	1	0	9411	0
14 -	2432	116	7354	308	134	52	19	112	29	2	2	10561	0
15 -	3028	125	6479	227	142	41	22	104	16	1	0	10185	0
16 -	8103	117	11729	314	134	70	50	20	5	0	0	20542	0
17 -	7637	129	11368	303	160	57	20	38	5	2	1	19720	0
18 -	4220	80	9126	178	112	46	11	116	31	9	0	13929	0
total	55084	1400	109824	3241	1879	676	314	951	262	28	5	173664	0

FORM A: TRAFFIC VOLUME COUNT SURVEY, FIS ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION: 1 DATE: 20-9 (Sat)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	8115	67	9843	219	124	76	21	4				18469	
8 -	3040	93	5542	145	79	45	19	39	18	15		9035	
9 -	1147	64	5180	114	53	44	13	87	14	1		6717	
10 -	1267	104	4513	161	55	46	10	67	13			6236	
11 -	1325	63	4071	121	36	35	10	65	11	2		5739	
12 -	1517	69	3412	70	37	25	10	37	14	3		5194	
13 -	1634	35	3043	80	54	19	9	33	3			4910	
14 -	1446	51	3630	123	52	33	8	51	12			5406	
15 -	1604	61	3836	124	76	35	19	31	27	3		5816	
16 -	2437	38	4302	128	64	52	77	5	3			7106	
17 -	2088	48	4125	165	44	39	4	16	6			6535	
18 -	238	69	1576	122	30	20	11	7	10			2683	
total	25858	762	53073	1572	704	469	211	442	131	24		83246	

STATION No: 202 DIRECTION: 2 DATE: 20-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1747	32	5432	138	109	42	21	1				7522	
8 -	1095	35	5133	156	74	38	14	13				6558	
9 -	967	63	4101	116	90	41	15	70	7	1		5471	
10 -	1263	72	3924	125	70	52	14	90	11	2		5623	
11 -	2049	61	4674	127	61	19	13	64	10			7078	
12 -	1614	56	3669	71	55	31	13	49	7	1		5566	
13 -	930	70	3096	95	57	25	11	54	8	3		4249	
14 -	895	61	4072	130	91	33	21	73	17	1		5394	
15 -	1289	49	4741	97	80	24	19	58	13			6370	
16 -	1750	63	5924	137	81	37	20	14	5			8031	
17 -	2294	56	5422	120	63	36	13	12	1			8017	
18 -	1392	47	4104	91	46	36	11	25	11	6		5769	
total	17185	665	54292	1403	877	414	185	523	90	14		75548	

STATION No: 202 DIRECTION: 1+2 DATE: 20-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	9862	99	15275	357	233	118	42	5				25991	
8 -	4135	128	10675	301	153	83	33	52	18	15		15593	
9 -	2114	127	9281	230	143	85	28	157	21	2		12188	
10 -	2530	176	8437	286	125	98	24	157	24	2		11859	
11 -	3374	124	8745	248	97	54	23	129	21	2		12817	
12 -	3131	125	7081	141	92	56	23	86	21	4		10760	
13 -	2464	105	6139	175	111	44	20	87	11	3		9159	
14 -	2341	112	7702	253	143	66	29	124	29	1		10800	
15 -	2893	110	8577	221	156	59	38	89	40	3		12196	
16 -	4187	101	10226	265	145	89	97	19	8			15137	
17 -	4382	104	9547	285	107	75	17	28	7			14552	
18 -	1630	116	5680	213	76	56	22	32	21	6		7852	
total	43043	1427	107365	2975	1581	883	396	965	221	38		158894	

FORM A: TRAFFIC VOLUME COUNT SURVEY, F/S ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION: 1 DATE: 21-9 (Sun)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1546	55	2777	58	113	17	9	4				4579	
8 -	1675	86	3488	73	109	19	15	18	1			5484	
9 -	1340	101	3617	65	80	11	12	44	5	2		5277	
10 -	932	76	3412	63	68	17	10	42	12	2		4634	
11 -	699	67	3054	48	49	22	15	38	5			3997	
12 -	595	54	2473	66	37	20	7	26	4	2		3284	
13 -	910	57	2841	79	66	19	18	28	3	1		4022	
14 -	1047	58	3117	95	53	21	15	33	1	1		4441	
15 -	1003	73	3374	98	81	27	15	31	1	2		4705	
16 -	472	63	2154	99	66	38	13	12	3	2		2922	
17 -	639	70	2546	141	70	53	22	7	4	1		3553	
18 -	659	64	2541	132	76	46	16	16	6	2		3558	
total	11517	824	35394	1017	868	310	167	299	45	15		50456	

STATION No: 202 DIRECTION: 2 DATE: 21-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1128	47	2585	131	97	31	14	13	1			4047	
8 -	1127	49	4808	95	100	17	9	14				6219	
9 -	1148	81	5212	109	104	20	16	54	3			6747	
10 -	1101	81	4716	74	78	23	10	50	3			6136	
11 -	1128	79	3935	61	75	18	10	52	2	3		5363	
12 -	759	82	3404	54	81	17	18	28	5	1		4449	
13 -	658	72	3398	88	75	10	9	32		3		4545	
14 -	743	50	4407	95	70	9	11	47	2	3		5437	
15 -	1157	52	4051	102	79	3	35	53	5	3		5540	
16 -	963	56	3437	79	53	4	20	58	4	3		4677	
17 -	888	44	2904	53	46	15	21	51	8	7		4037	
18 -	957	23	3028	63	38	6	13	37	10	5		4180	
total	11957	716	45885	1004	896	173	186	489	43	28		61377	

STATION No: 202 DIRECTION: 1+2 DATE: 21-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	2674	102	5362	189	210	48	23	17	1			8626	
8 -	2802	135	8296	168	209	36	24	32	1			11703	
9 -	2488	182	8829	174	184	31	28	98	8	2		12024	
10 -	2033	157	8128	137	146	40	20	92	15	2		10770	
11 -	1827	146	6989	109	124	40	25	90	7	3		9360	
12 -	1354	136	5877	120	118	37	25	54	9	3		7733	
13 -	1768	129	6239	167	141	29	27	60	3	4		8567	
14 -	1790	108	7524	190	123	30	26	80	3	4		9878	
15 -	2160	125	7425	200	160	30	50	84	6	5		10245	
16 -	1435	119	5591	178	119	42	33	70	7	5		7599	
17 -	1527	114	5450	194	116	68	43	58	12	8		7590	
18 -	1616	87	5569	195	114	52	29	53	16	7		7738	
total	23474	1540	81279	2021	1764	483	353	785	88	43		111833	

FORM A: TRAFFIC VOLUME COUNT SURVEY, F/S ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION 1 DATE: 22-9 (Hanoi)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenge	5) Taxi. Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	5652	73	10648	202	96	61	18	13				16763	
8 -	2698	96	5064	140	67	22	13	14	2			8116	
9 -	1709	78	3638	141	113	42	16	85	13	1		5836	
10 -	1122	79	4455	205	74	94	17	80	11	3		5140	
11 -	1614	85	3613	137	62	36	18	55	10	1		5631	
12 -	1467	58	2347	91	119	17	17	50	11			4177	
13 -	1238	54	3380	116	74	20	20	62	5	1		4970	
14 -	1129	30	3746	97	66	26	16	51	9	3		5173	
15 -	1236	44	3380	98	69	29	21	49	11			4937	
16 -	1971	67	5276	127	87	27	31	20	3			7603	
17 -	3279	64	5184	113	83	35	22	29	3	1		8813	
18 -	712	125	2977	242	198	35	8	74	5	1		4377	
total	23827	853	53708	1709	1108	444	217	582	83	11		32542	

STATION No: 202 DIRECTION 2 DATE: 22-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenge	5) Taxi. Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	2596	45	7542	162	123	53	21	10				10522	
8 -	1349	59	4512	167	86	74	17	14	1			6279	
9 -	503	77	2825	134	84	33	16	47	11			3730	
10 -	860	63	3129	93	112	44	20	76	3			4400	
11 -	1402	69	3212	91	87	31	17	84	6			4999	
12 -	1105	61	2873	61	84	24	12	62	3			4285	
13 -	770	47	2696	116	65	35	15	46	14			3804	
14 -	840	40	3194	124	73	25	15	73	14	1		4399	
15 -	1012	53	3744	134	72	26	24	87	12	1		5165	
16 -	2009	67	7307	221	84	25	17	33	6			9769	
17 -	3285	128	8916	144	65	49	6	15	15			12623	
18 -	3362	61	5753	101	86	71	24	53	19	8		9538	
total	19093	770	55703	1548	1021	490	204	600	104	10		79543	

STATION No: 202 DIRECTION 1+2 DATE: 22-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cycl	4) Passenge	5) Taxi. Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	8248	118	18190	364	219	114	39	23				27315	
8 -	4047	155	9576	307	153	96	30	28	3			14395	
9 -	2212	155	6463	275	197	75	32	132	24	1		9566	
10 -	1982	142	7584	298	186	138	37	156	14	3		10540	
11 -	3016	154	6825	228	149	67	35	139	16	1		10630	
12 -	2572	119	5220	152	203	41	29	112	14			8462	
13 -	2008	101	6078	232	139	55	35	108	19	1		8774	
14 -	1969	70	6940	221	139	51	31	124	23	4		9572	
15 -	2248	97	7124	232	141	55	45	136	23	1		10102	
16 -	3980	134	12563	348	171	52	48	53	9			17378	
17 -	6564	192	14100	257	148	84	28	44	18	1		21436	
18 -	4074	186	8730	343	284	106	32	127	24	9		13915	
total	42920	1623	109411	3257	2129	934	421	1182	187	21		162085	

FORM A: TRAFFIC VOLUME COUNT SURVEY, F/S ON SOUTHERN SECTION OF RING ROAD 3 IN HANOI

STATION No: 202 DIRECTION : 1 DATE 23-9 (Tue)

HOUR	1) Bicycle	2) Cyclo	3) Motor Cyclo	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	7019	135	12198	398	59	62	29	16				19916	
8 -	3114	72	6924	164	130	47	13	31	2			10497	
9 -	1787	82	4694	148	68	27	16	64	4	3		6893	
10 -	1815	87	3723	177	54	25	10	64	9	1		5965	
11 -	3103	63	4615	160	98	19	11	75	8	2		8154	
12 -	2123	71	4216	68	115	16	20	51	8			6688	
13 -	1603	64	3671	108	59	35	12	51	11			5614	
14 -	1644	86	3612	110	83	45	19	65	5			5669	
15 -	1443	56	3142	198	57	73	14	54	6			5043	
16 -	2377	66	5386	192	64	70	19	12	2			8188	
17 -	4698	99	6081	212	57	55	18	20	2			11242	
18 -	1834	65	5818	132	62	32	18	37	12			8010	
total	32560	946	64080	2067	906	506	199	540	69	6		101879	

STATION No: 202 DIRECTION : 2 DATE: 23-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cyclo	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	1965	47	5323	178	89	52	18	6				7678	
8 -	1208	50	4341	134	122	43	8	17				5923	
9 -	1198	98	4647	138	127	35	13	80	11	1		6348	
10 -	1268	86	3778	131	85	42	15	80	11	2		5498	
11 -	1248	56	3476	152	89	34	14	74	10	2		5155	
12 -	1418	70	2910	82	70	21	14	72	2	4		4663	
13 -	954	59	2431	105	79	40	16	66	6	1		3777	
14 -	989	68	3078	148	80	40	11	73	2	2		4489	
15 -	1297	77	3790	139	75	31	12	61	4	2		5488	
16 -	3081	75	7047	125	82	56	21	10	1			10498	
17 -	3433	58	9821	160	100	26	9	10				13617	
18 -	2142	56	5280	90	71	18	9	48	6			7720	
total	20201	798	55922	1582	1069	438	160	617	53	14		80854	

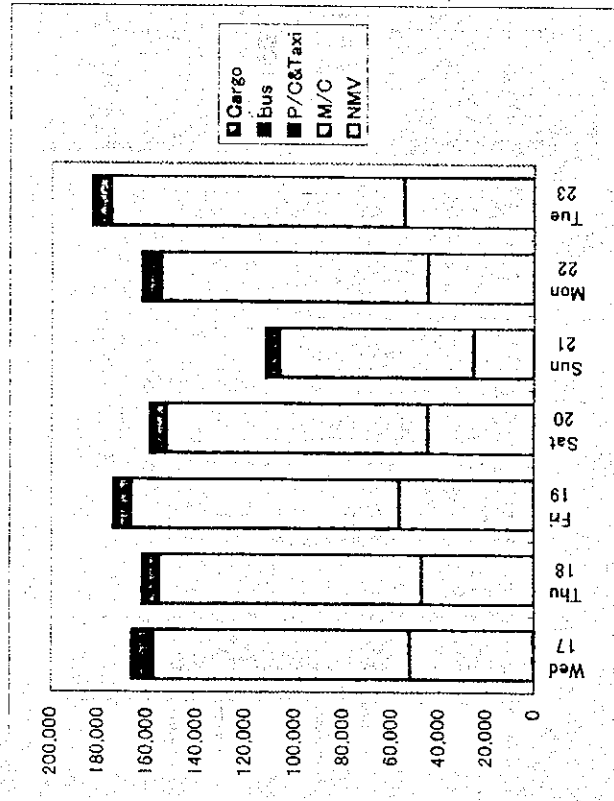
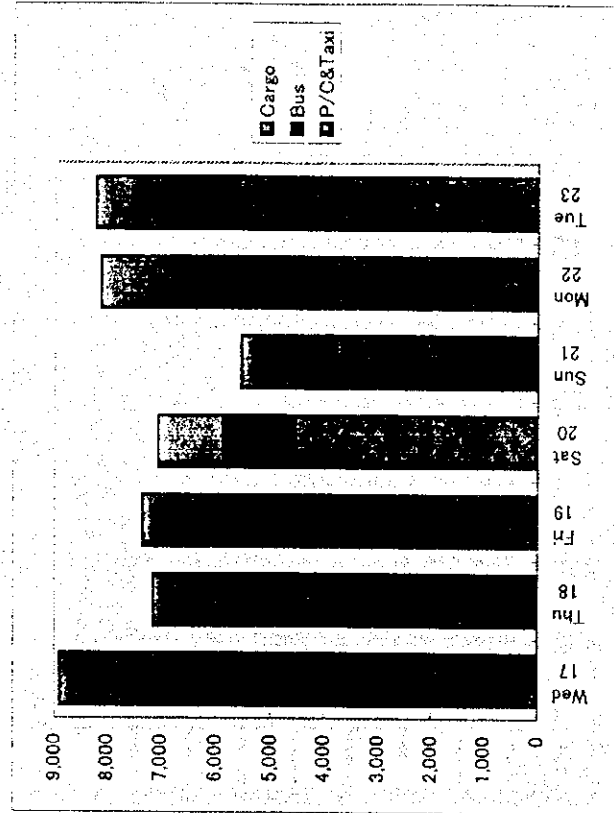
STATION No: 202 DIRECTION : 1+2 DATE: 23-9

HOUR	1) Bicycle	2) Cyclo	3) Motor Cyclo	4) Passenger	5) Taxi, Lam	6) Small bus	7) Bus	8) Small truc	9) Truck	10) Trailer	11) Others	Total	Remarks
7 -	8984	182	17521	576	148	114	47	22				27594	
8 -	4322	122	11265	298	252	90	21	48	2			16420	
9 -	2985	180	9341	286	195	62	29	144	15	4		13241	
10 -	3083	173	7501	308	139	67	25	144	20	3		11463	
11 -	4351	119	8091	312	187	53	25	149	18	4		13309	
12 -	3541	141	7128	150	185	37	34	123	10	4		11351	
13 -	2557	123	6102	213	138	75	28	137	17	1		9391	
14 -	2633	152	6690	258	163	85	30	138	7	2		10158	
15 -	2740	133	6932	337	132	104	26	115	10	2		10531	
16 -	5458	141	12433	317	146	126	40	22	3			18686	
17 -	8131	157	15902	372	157	81	27	30	2			24859	
18 -	3976	121	11098	222	133	50	27	85	18			15730	
total	52761	1744	120002	3649	1975	944	359	1157	122	20		182732	

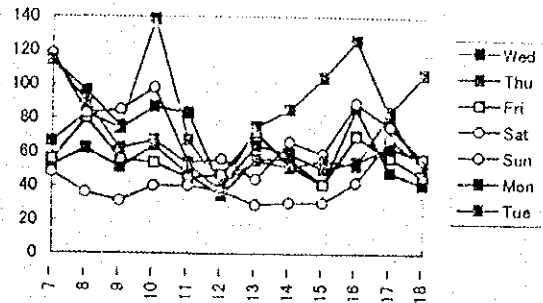
12h Traffic Count Survey

Station	Date	1) Bicycle		2) Cyclo		3) Motor Cyc		4) Passeng's Taxi, Lam		5) Passeng's Taxi, Lam		6) Small bus		7) Bus		8) Small tru		9) Truck		10) Trailer		11) Others		Total MV		
		Bicycle	Cyclo	Motor Cyc	Passeng's Taxi, Lam	Passeng's Taxi, Lam	Small bus	Bus	Small tru	Truck	Trailer	Others	NMV	M/C	Passenge	Cargo										
202	17-9	50,583	1,487	104,727	3,523	2,955	778	391	957	251	33	1	52,070	113,626	104,727	7,657	1,241									
202	18-9	45,582	1,423	107,553	3,072	1,779	638	312	1,069	242	26	0	47,005	114,691	107,553	5,801	1,337									
202	19-9	55,084	1,400	109,824	3,241	1,879	676	314	951	282	28	5	56,484	117,180	109,824	6,110	1,241									
202	20-9	43,043	1,427	107,365	2,975	1,581	883	396	965	221	38	0	44,470	114,424	107,365	5,835	1,224									
202	21-9	23,474	1,540	81,279	2,021	1,764	483	353	788	88	43	0	25,014	86,819	81,279	4,621	919									
202	22-9	42,920	1,623	109,411	3,257	1,129	934	421	1,182	187	21	0	44,543	117,542	109,411	6,741	1,390									
202	23-9	52,761	1,744	120,002	3,649	1,975	944	359	1,157	122	20	0	54,505	128,228	120,002	6,927	1,299									

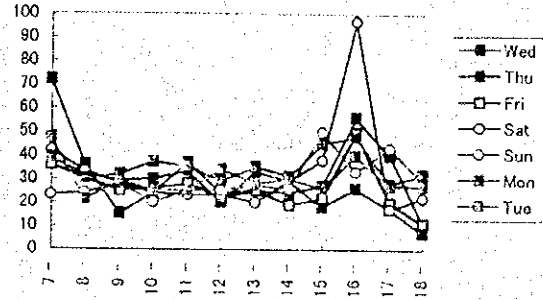
	NMV	M/C	P/C&Taxi	Bus	Cargo
17 Wed	52,070	104,727	6,488	1,169	1,242
18 Thu	47,005	107,553	4,851	950	1,337
19 Fri	56,484	109,824	5,120	990	1,246
20 Sat	44,470	107,365	4,556	1,279	1,224
21 Sun	25,014	81,279	3,785	836	919
22 Mon	44,543	109,411	5,386	1,355	1,390
23 Tue	54,505	120,002	5,624	1,303	1,299



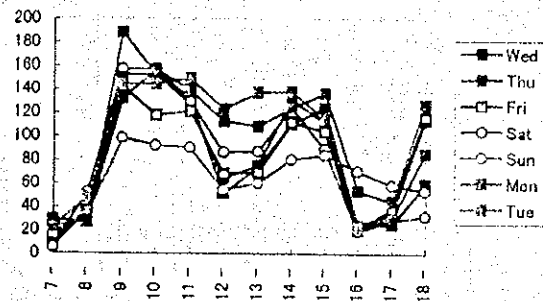
Small Bus	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	66	52	56	118	48	114	114
8 -	53	62	80	83	36	96	90
9 -	74	51	56	85	31	75	62
10 -	37	64	54	98	40	138	67
11 -	83	47	45	54	40	67	53
12 -	39	34	47	56	37	41	37
13 -	64	56	72	44	29	55	75
14 -	59	56	52	66	30	51	85
15 -	50	41	41	59	30	55	104
16 -	54	86	70	89	42	52	126
17 -	63	48	57	75	68	84	81
18 -	56	41	46	56	52	106	50
total	778	638	676	883	483	934	944



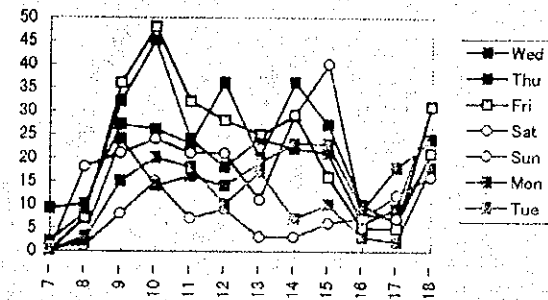
Bus	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	72	38	36	42	23	39	47
8 -	36	32	30	33	24	30	21
9 -	15	29	25	28	28	32	29
10 -	24	30	26	24	20	37	25
11 -	37	33	28	23	25	35	25
12 -	24	20	22	23	25	29	34
13 -	25	33	25	20	27	35	28
14 -	24	29	19	29	26	31	30
15 -	27	18	22	38	50	45	26
16 -	56	26	50	97	33	48	40
17 -	40	17	20	17	43	28	27
18 -	11	7	11	22	29	32	27
total	391	312	314	396	353	421	359



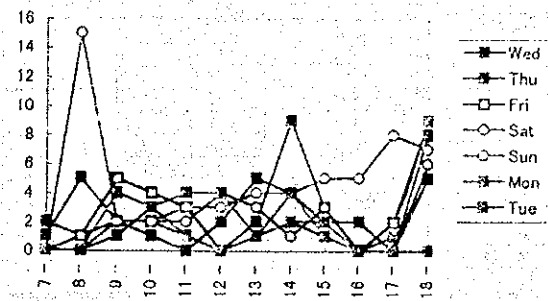
Small Truck	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	29	13	7	5	17	23	22
8 -	26	35	36	52	32	28	48
9 -	152	188	142	157	98	132	144
10 -	152	153	118	157	92	156	144
11 -	132	126	121	129	90	139	149
12 -	51	64	68	86	54	112	123
13 -	73	75	69	87	60	108	137
14 -	110	131	112	124	80	124	138
15 -	124	112	104	89	84	136	115
16 -	24	24	20	19	70	53	22
17 -	25	34	38	28	58	44	30
18 -	59	114	116	32	53	127	85
total	957	1069	951	965	788	1182	1157



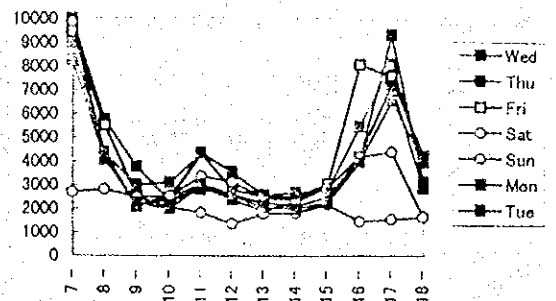
Truck	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	9	2	0	0	1	0	0
8 -	10	8	7	18	1	3	2
9 -	27	32	36	21	8	24	15
10 -	26	45	48	24	15	14	20
11 -	23	24	32	21	7	16	18
12 -	36	18	28	21	9	14	10
13 -	20	24	25	11	3	19	17
14 -	36	22	29	29	3	23	7
15 -	27	21	16	40	6	23	10
16 -	10	6	5	8	7	9	3
17 -	6	9	5	7	12	18	2
18 -	21	31	31	21	16	24	18
total	251	242	262	221	88	187	122



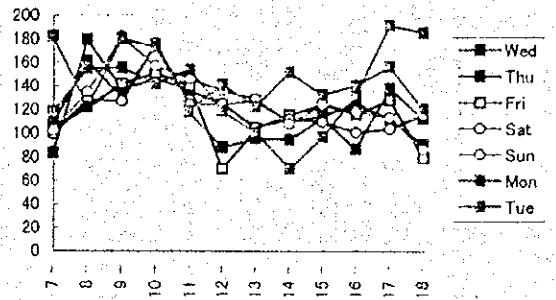
Trailer	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	1	2	0	0	0	0	0
8 -	5	1	1	15	0	0	6
9 -	2	2	5	2	2	1	4
10 -	2	1	4	2	2	3	3
11 -	1	0	3	2	3	1	4
12 -	0	2	0	4	3	0	4
13 -	2	5	1	3	4	1	1
14 -	9	4	2	1	4	4	2
15 -	3	2	1	3	5	1	2
16 -	0	2	0	0	5	0	0
17 -	0	0	2	0	8	1	0
18 -	8	5	9	6	7	9	0
total	33	26	28	38	43	21	20



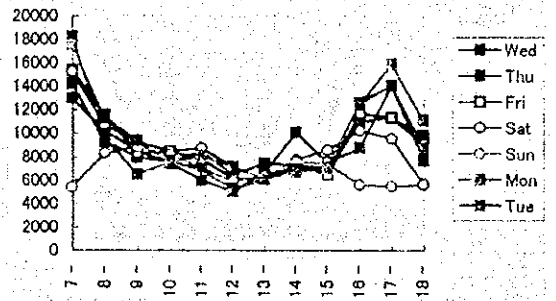
Bicycle	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	9982	9926	9444	9862	2674	9248	8984
8 -	5772	4377	5530	4135	2802	4047	4322
9 -	3769	2091	2538	2114	2488	2212	2989
10 -	2311	2448	2470	2530	2033	1982	3083
11 -	2820	3001	4354	3374	1827	3016	4351
12 -	2556	2383	2804	3131	1354	2572	3541
13 -	2250	1893	2524	2464	1768	2008	2557
14 -	2094	2277	2432	2341	1790	1999	2633
15 -	2487	2890	3028	2893	2160	2248	2740
16 -	4055	4163	8103	4187	1435	3980	5458
17 -	9368	7268	7637	4382	1527	6564	8131
18 -	3119	2863	4220	1630	1616	4074	3976
total	50583	45582	55084	43043	23474	42920	52761



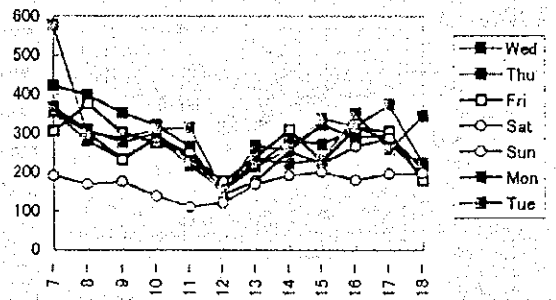
Cyclo	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	83	108	104	99	102	118	182
8 -	179	161	122	128	135	155	122
9 -	137	130	142	127	182	155	180
10 -	146	175	151	176	157	142	173
11 -	136	118	140	124	146	154	119
12 -	124	88	70	125	136	119	141
13 -	128	96	104	105	129	101	123
14 -	110	95	116	112	108	70	152
15 -	115	113	125	110	125	97	133
16 -	126	87	117	101	119	134	141
17 -	112	139	129	104	114	192	157
18 -	91	113	60	116	87	186	121
total	1487	1423	1400	1427	1540	1623	1744



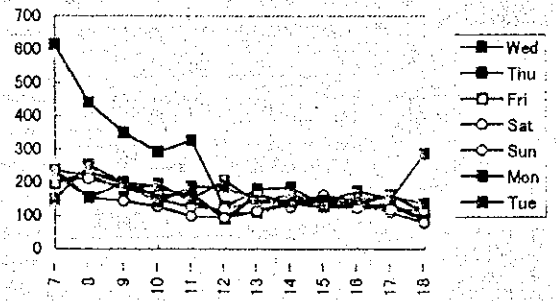
M/C	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	12958	14214	15333	15275	5362	18190	17521
8 -	10178	9288	11590	10675	8296	9576	11265
9 -	8451	7926	8311	9281	8829	6483	9341
10 -	7418	7523	8414	8437	8128	7584	7501
11 -	5968	8444	7746	8745	6989	6825	8091
12 -	5023	6455	6185	7081	5877	5220	7126
13 -	6639	7389	6189	6139	6239	6076	6102
14 -	10052	7267	7354	7702	7524	6940	6890
15 -	7501	7003	6475	8577	7425	7124	6932
16 -	8740	10963	11729	10226	5591	12583	12433
17 -	14112	11312	11368	9547	5450	14100	15902
18 -	7687	9769	9126	5680	5569	8730	11098
total	104727	107553	109824	107365	81279	109411	120002



P/C	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	420	352	304	357	189	364	576
8 -	396	280	375	301	168	307	298
9 -	351	231	300	230	174	275	286
10 -	319	289	275	286	137	298	308
11 -	283	215	241	248	109	228	312
12 -	144	154	176	141	120	152	150
13 -	267	216	239	175	167	232	213
14 -	255	282	309	253	190	221	258
15 -	320	270	227	221	200	232	337
16 -	288	316	314	265	178	348	317
17 -	293	278	303	285	194	257	372
18 -	207	189	178	213	195	343	222
total	3523	3072	3241	2975	2021	3257	3649



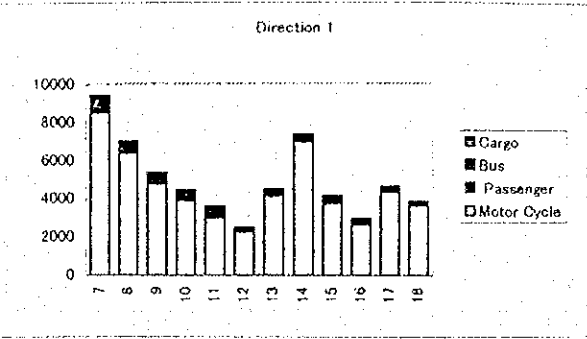
Taxi Lam	17 Wed	18 Thu	19 Fri	20 Sat	21 Sun	22 Mon	23 Tue
7 -	613	234	196	233	210	219	148
8 -	440	220	230	153	209	153	252
9 -	347	176	197	143	184	197	195
10 -	290	194	158	125	146	186	139
11 -	324	142	164	97	124	149	187
12 -	124	104	89	92	118	203	185
13 -	177	107	163	111	141	139	138
14 -	183	135	134	143	123	139	163
15 -	131	124	142	158	160	141	132
16 -	124	122	134	145	119	171	146
17 -	123	133	160	107	116	148	157
18 -	89	88	112	76	114	284	133
total	2965	1779	1879	1581	1764	2129	1975





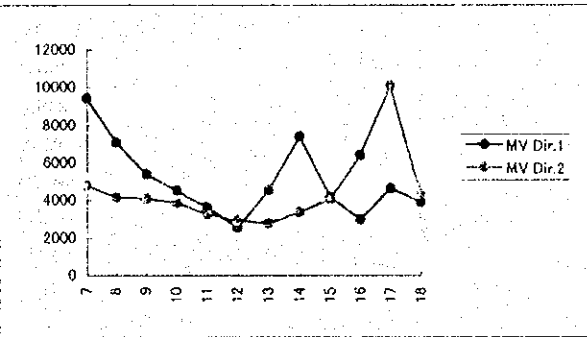
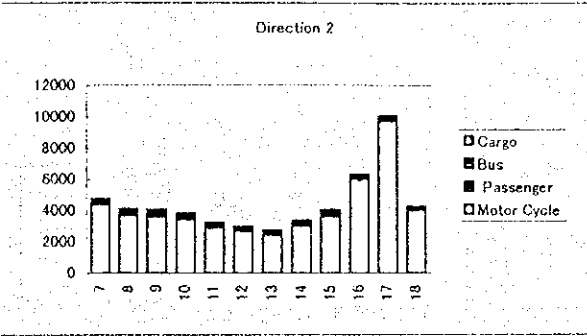
STATION No: 202 DIRECTION : 1 DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir 1
7	8551	745	83	34	9413
8	6430	542	51	20	7043
9	4809	430	32	96	5367
10	3966	379	50	83	4478
11	3050	387	77	89	3603
12	2309	142	35	38	2524
13	4200	238	28	42	4518
14	7024	221	42	85	7372
15	3818	242	34	63	4157
16	2691	202	45	10	2948
17	4351	212	34	21	4618
18	3645	145	33	38	3861



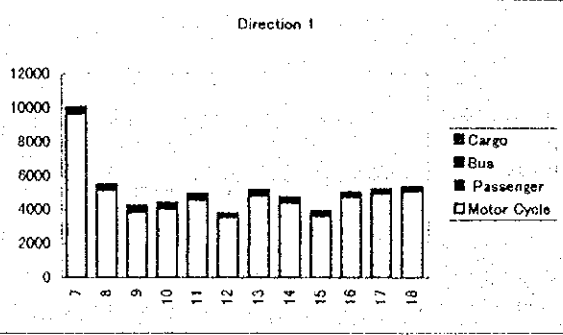
STATION No: 202 DIRECTION : 2 DATE: 17-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir 2
7	4407	288	55	5	4755
8	3748	294	68	21	4131
9	3642	268	57	85	4052
10	3452	230	61	97	3840
11	2918	200	43	67	3228
12	2714	126	28	49	2917
13	2439	206	51	53	2749
14	3028	217	41	70	3356
15	3683	209	43	91	4026
16	5049	210	65	24	6348
17	9761	204	69	10	10044
18	4042	151	34	50	4277



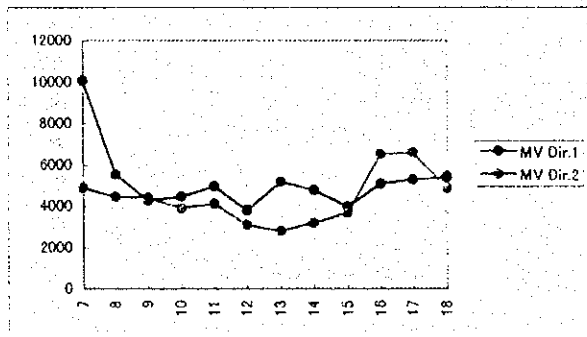
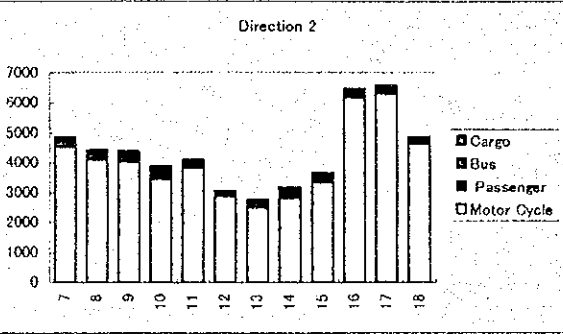
STATION No: 202      DIRECTION : 1      DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	9674	324	50	7	10055
8	5181	254	39	25	5499
9	3880	233	38	96	4247
10	4059	235	39	89	4422
11	4604	204	36	79	4923
12	3566	149	27	39	3781
13	4884	170	47	45	5146
14	4438	211	36	77	4762
15	3667	204	25	44	3940
16	4789	204	50	19	5062
17	4999	192	37	29	5257
18	5128	142	25	85	5380



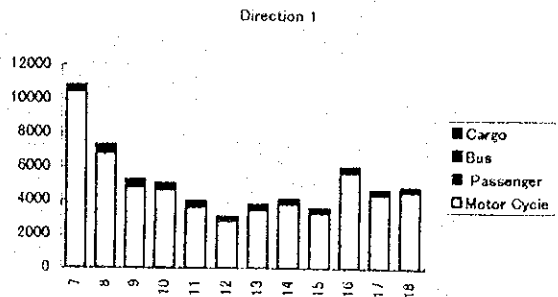
STATION No: 202      DIRECTION : 2      DATE: 18-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	4540	262	40	10	4852
8	4107	246	55	19	4427
9	4046	174	42	126	4388
10	3464	248	55	110	3877
11	3840	153	44	71	4108
12	2889	109	27	45	3070
13	2506	153	42	59	2759
14	2829	206	49	80	3164
15	3336	190	34	91	3651
16	6174	234	62	13	6483
17	6313	219	28	14	6574
18	4641	135	23	65	4864



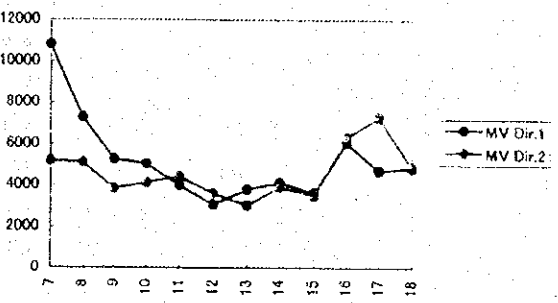
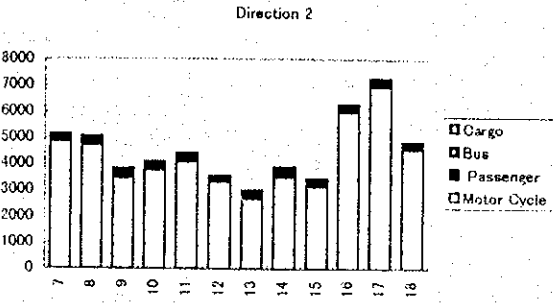
STATION No: 202 DIRECTION : 1 DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	10457	282	44	1	10784
8	6863	336	38	29	7266
9	4827	280	40	89	5236
10	4629	243	43	87	5002
11	3645	200	42	79	3966
12	2850	125	34	36	3045
13	3494	191	54	42	3781
14	3828	166	32	78	4104
15	3305	205	30	51	3591
16	5710	241	65	10	6026
17	4374	221	42	34	4671
18	4557	145	34	61	4797



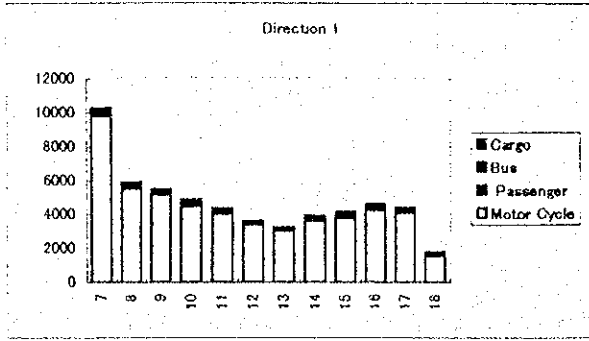
STATION No: 202 DIRECTION : 2 DATE: 19-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	4876	218	48	6	5148
8	4727	269	72	15	5083
9	3484	217	41	94	3836
10	3785	190	37	83	4095
11	4101	205	31	77	4414
12	3335	140	35	60	3570
13	2695	211	43	53	3002
14	3528	277	39	65	3907
15	3174	164	33	70	3441
16	6019	207	55	15	6296
17	6994	242	35	11	7282
18	4569	145	23	95	4832



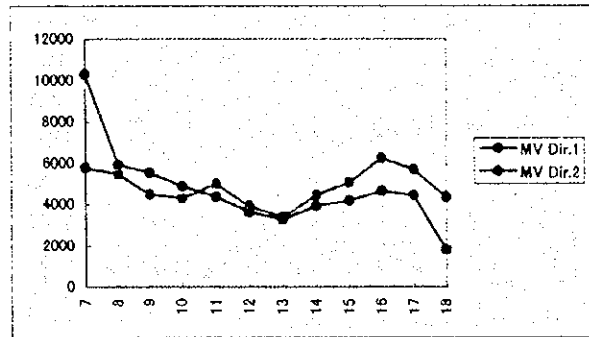
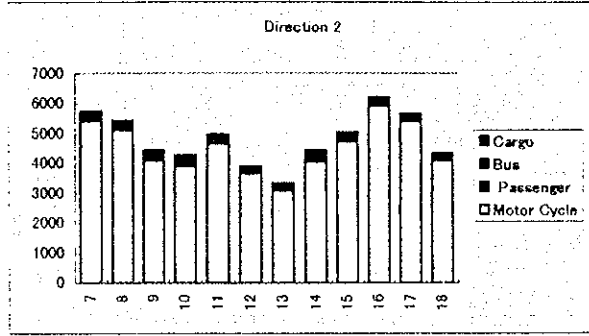
STATION No: 202 DIRECTION : 1 DATE: 20-9

HOUR	Motor Cycle	Passenger	Bus	Cargo	MV Dir.1
7	9843	343	97	4	10287
8	5542	224	64	72	5902
9	5180	167	57	102	5506
10	4513	216	56	80	4865
11	4071	157	45	78	4351
12	3412	107	35	54	3608
13	3043	134	28	36	3241
14	3630	175	41	63	3909
15	3836	200	54	61	4151
16	4302	192	129	8	4631
17	4125	209	43	22	4399
18	1576	152	31	17	1776



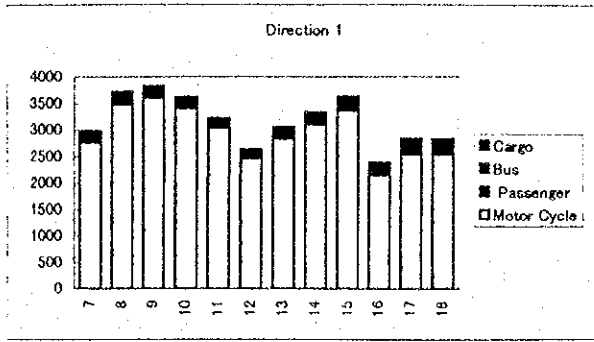
STATION No: 202 DIRECTION : 2 DATE: 20-9

HOUR	Motor Cycle	Passenger	Bus	Cargo	MV Dir.2
7	5432	247	63	1	5743
8	5133	230	52	13	5428
9	4101	206	56	78	4441
10	3924	195	66	103	4288
11	4674	188	32	74	4968
12	3669	126	44	57	3996
13	3096	152	36	65	3349
14	4072	221	54	91	4438
15	4741	177	43	71	5032
16	5924	218	57	19	6218
17	5422	183	49	13	5667
18	4104	137	47	42	4330



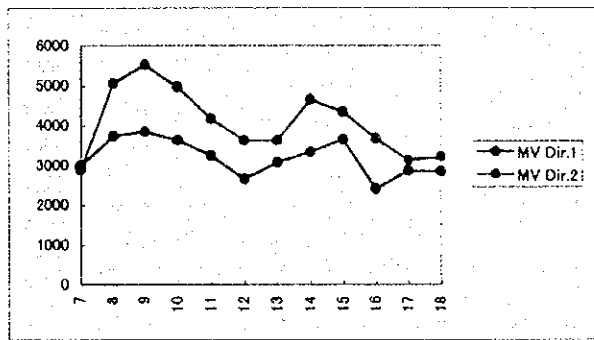
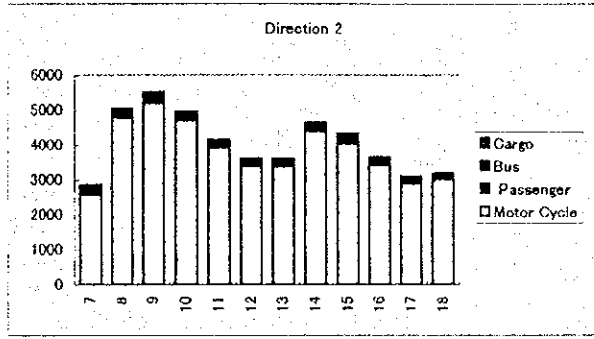
STATION No: 202 DIRECTION : 1 DATE: 21-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	2777	171	26	4	2978
8	3488	182	34	19	3723
9	3617	145	23	51	3836
10	3412	131	27	56	3626
11	3054	97	37	43	3231
12	2473	103	27	32	2635
13	2841	145	37	32	3055
14	3117	148	36	35	3336
15	3374	179	42	34	3629
16	2154	165	51	17	2387
17	2546	211	75	12	2844
18	2541	208	62	24	2835



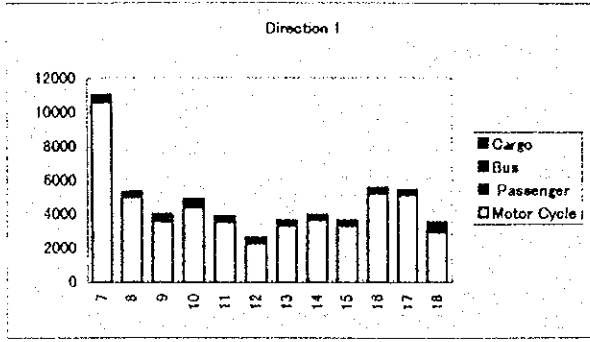
STATION No: 202 DIRECTION : 2 DATE: 21-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	2585	228	45	14	2872
8	4808	195	26	14	5043
9	5212	213	36	57	5518
10	4716	152	33	53	4954
11	3935	136	28	57	4156
12	3404	135	35	34	3608
13	3398	163	19	35	3615
14	4407	165	20	52	4644
15	4051	181	38	61	4331
16	3437	132	24	65	3658
17	2904	99	36	66	3105
18	3028	101	19	52	3200



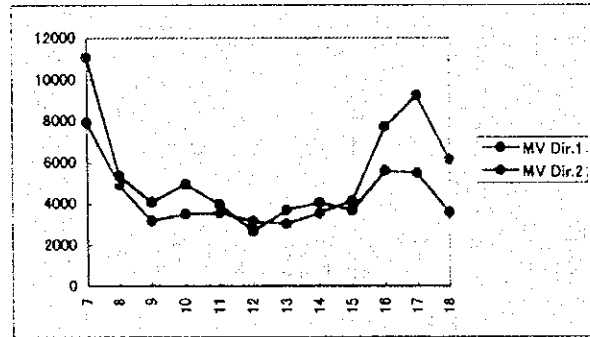
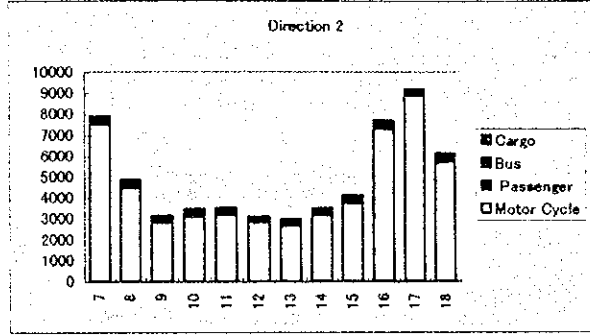
STATION No: 202      DIRECTION : 1      DATE: 22-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	10648	298	79	13	11038
8	5064	207	35	16	5322
9	3638	254	58	99	4049
10	4455	279	111	94	4939
11	3813	199	54	66	3932
12	2347	210	34	61	2652
13	3380	190	40	68	3678
14	3746	163	42	63	4014
15	3380	167	50	60	3657
16	5276	214	58	23	5571
17	5184	196	57	33	5470
18	2977	440	43	80	3540



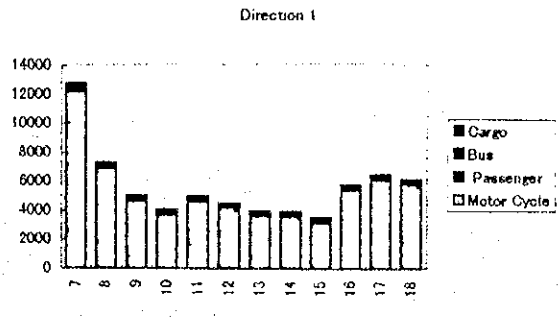
STATION No: 202      DIRECTION : 2      DATE: 22-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	7542	285	74	10	7911
8	4512	253	91	15	4871
9	2825	218	48	58	3150
10	3129	205	64	79	3477
11	3212	178	48	90	3528
12	2873	145	36	65	3119
13	2696	181	50	60	2987
14	3194	197	40	88	3519
15	3744	206	50	100	4100
16	7307	305	42	39	7693
17	8916	209	55	30	9210
18	5753	187	95	80	6115



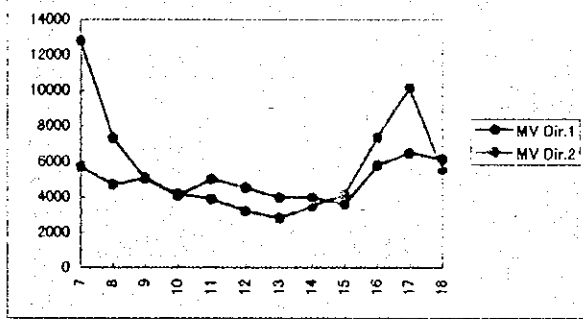
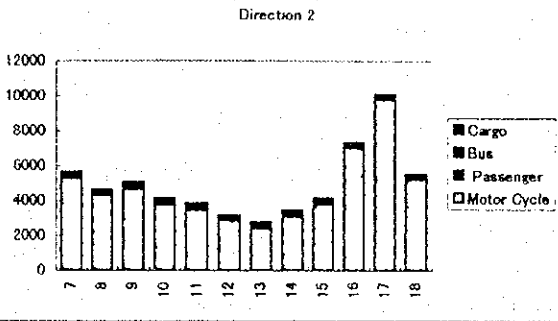
STATION No: 202 DIRECTION: 1 DATE: 23-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.1
7	12198	457	91	16	12762
8	6924	294	60	33	7311
9	4694	216	43	71	5024
10	3723	231	35	74	4063
11	4615	258	30	85	4988
12	4216	183	36	59	4494
13	3671	167	47	62	3947
14	3612	193	64	70	3939
15	3142	255	87	60	3544
16	5386	256	89	14	5745
17	6081	269	73	22	6445
18	5818	194	50	49	6111



STATION No: 202 DIRECTION: 2 DATE: 23-9

HOUR	Motor Cycle	for Passenger	Bus	for Cargo	MV Dir.2
7	5323	267	70	6	5666
8	4341	256	51	17	4665
9	4647	265	48	92	5052
10	3778	216	57	93	4144
11	3476	241	48	86	3851
12	2910	152	35	78	3175
13	2431	184	56	93	2764
14	3078	228	51	77	3434
15	3790	214	43	67	4114
16	7047	207	77	11	7342
17	9821	260	35	10	10126
18	5280	161	27	54	5522

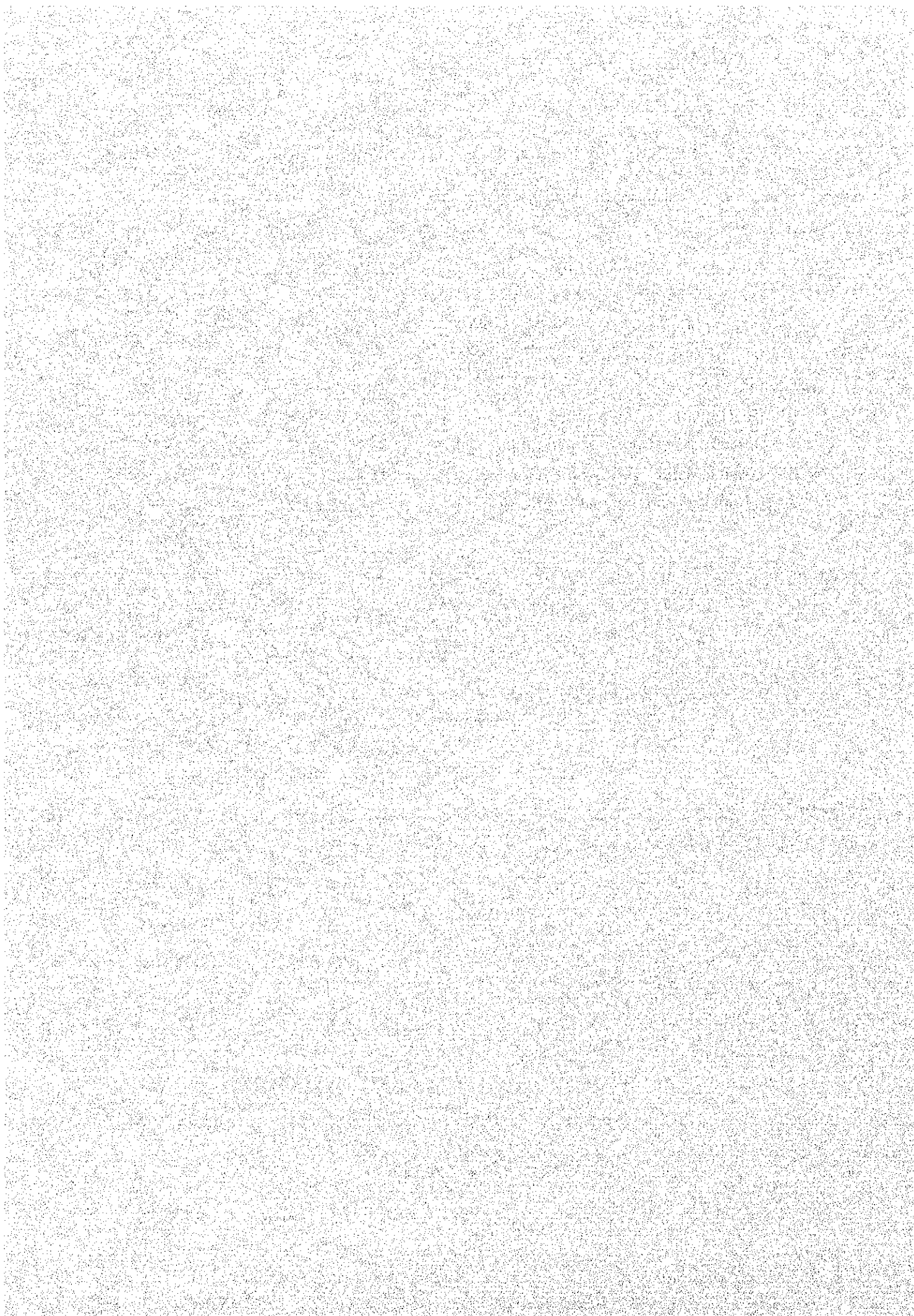






**APPENDIX 2 Chapter 5 Physical Condition of Study Area  
and Engineering Site Survey**

1. Alternative Highway Route Results
2. Results of Flow Velocity Measurement
3. Estimation of Scouring Depth around Piers
4. Results of Settlement Analysis
5. Influence Values for Vertical Stress
6. Consolidation e- log Curves
7. Possible Base Course Material Pits
8. Possible Sand Borrow Pits
9. Geological Longitudinal Profile



## 1. Alternative Highway Route Survey Results

### A. PLANE TABLE SURVEY

There (3) alternative highway routes are proposed. They are alternative 1, alternative 2b and alternative 3.

Refer to Fig. 3.1 of location of each route alternative.

#### ALTERNATIVE ROUTE 1

Survey Chain in m	Description of Objects encountered
Highway No.1 to Ch. 1200	Phap van Town. More than 10 commercial buildings and 30 residential buildings may be affected and subject to relocate.
Ch.1200 to Ch. 3600	Mostly fish ponds and rice field. Also 10m wide canal exists at Ch. 1475 and a 5m road at Ch.2000.
At Ch. 3600	Song Lu River ( 20m wide)
Ch. 3600 to Ch. 3900	A small village. More than 10 residential buildings may be affected.
Ch. 3900 to Ch. 4300	Mostly fish ponds
At Ch. 4320	12m wide canal
Ch. 4320 to Ch. 6900	Mostly fish ponds
At Ch. 6930	5m wide road exists and approximately 20 residential houses may be affected
Ch. 6950 to Ch. 7350	Mostly fish and duck ponds
At Ch. 7360	Two duck farms are affected.
At Ch. 7410	Top of west dike ( 12 m wide road)
At Ch. 7440	A sand mining building is affected.
Ch. 7530 to Ch. 8045	Red River channel at high water level.
Ch. 8045 to Ch. 8445	Vegetable fields
At Ch. 8445	A farm road (5m wide)
Ch. 8450 to Ch. 8820	A farm village. More than 30 residential buildings may be affected.
Ch. 8820 to Ch 9200	Vegetable fields
Ch. 9200 to Ch. 9330:	Rice fields
At Ch. 9375	Top of east dike (10 m wide road)
Ch. 9400 to Ch.9785	Tho khoi village. More than 40 residential buildings may be affected.
Ch. 9785 to Ch. 9900	Tomb area (cemetery)
At Ch.10,100:	Alternative Route 1 joins with Route 2b & 3

#### ALTERNATIVE ROUTE 2B

This route is separated from Alternative route 1 at Ch. 4250 and joins with Alternative 3 at Ch. 5560. This sole portion of Alternative Route 2b mostly passes through over fish ponds, and only two buildings are affected by the route at the Alternative 3 junction.

### ALTERNATIVE ROUTE 3

This route is currently recommended and selected as a part of the future Ring Road No. 3 Highway.

Survey Chain in m	Description of Objects encountered
Highway No.1 to Ch. 1200	Future highway interchange joining with I-1 will be constructed at this area so that many commercial, industrial, and residential buildings ( Approximately 150 ) may be affected.
Ch.1200 to Ch. 1990	Two (2) commercial buildings are affected
At Ch. 1990	5 m wide road
Ch. 2000 to Ch. 2650	More than 10 buildings may be affected
At Ch. 2650	Song lu River ( 20m wide)
Ch. 2670 to Ch. 3400	More than 65 buildings are affected along Phap van - Yen so road.
At Ch. 3400	A canal crossing (12m wide)
Ch. 3400 to Ch. 3800	More than 30 residential buildings may be affected
At Ch. 3800	Triangle intersection
Ch. 3800 to Ch. 4420	More than 20 residential buildings may be affected.
At Ch. 4420	Lang Hoa Lac road ( 10m wide )
Ch. 4420 to Ch. 4520	More than 30 residential buildings may be affected
At Ch. 4520	5m wide village road
Ch. 4520 to Ch. 7600	Mostly fish ponds, rice fields, and vegetable fields. A few buildings are affected.
At Ch. 7650	Top of west dike ( 8m wide road )
Ch. 7700 to Ch. 9740	Sand dunes
Ch. 9740 to Ch. 9830	Red River Channel ( high water level )
Ch. 9830 to Ch. 10,020	Flood basin consists of sand dunes and vegetable fields
At Ch. 10,035	Top of east dike ( 8 m wide road)
Ch. 10,100 to Ch. 10,260	A lake
At Ch. 10,300	2m wide village road
Ch. 10,302 to Ch. 10,465	A small farm village with rice fields. A few houses are affected
At Ch. 10,465	12m wide canal
Ch. 10,485 to Ch. 11,350	Rice Fields
At Ch. 11,350	5m wide canal
Ch. 11,355 to Ch. 11,600	Rice fields
At Ch. 11,600	6m wide canal
Ch. 11,600 to Ch. 12,000	Rice fields
At Ch. 12,000	A canal (5m wide )
Ch. 12,000 to Ch. 12,540	Rice fields
At Ch. 12,540	A canal (5m wide)
Ch. 12,560 to Ch. 12,620	Rice fields

Ch. 12,620 to 12,700	Song Cau Bay River
Ch. 12,700 to Ch. 12,900	Rice fields
At Ch. 12,900	A canal (5m wide )
Ch. 12,900 to Ch. 13,220	Rice fields
Ch. 13,220 to Ch. 13,260	Pond
At Ch. 13,280	Highway No 5 (15 wide ), where a future highway will be constructed and more than 20 commercial buildings may be affected.

#### B. CENTERLINE/ PROFILE AND CROSS SECTION SURVEY

Both the results of centerline/ profile and cross section surveys contributed to the selection of the types of highway structures and to the estimation of quantities of the highway embankment materials.

The elevations of the River dikes governed the height of the Thanh tri Bridge and the elevations of the River bed governed the decision of the depths and sizes of the bridge piers and abutments.

On the both sides of the river, there exists a lot of fish ponds and lake which mostly range one (1) to two (2) meters in depth and the deepest pond is found to be 3m in depth.

## 2. Results of Flow Velocity Measurements (Table 5.1)

Alternative Route 2b & 3  
Date Measured: Oct. 3, 1997

**Table 5.1**

Vertical Measure Point	Flow Velocity (m/s)					Remarks
	I	II	III	IV	V	
0.2 H	1.085	1.37	1.486	1.245	0.906	Horizontal point
0.6 H	0.978	1.096	1.198	1.063	0.826	
0.8 H	0.831	0.895	0.96	1.006	0.76	
Time	9:40	10:10	10:18	10:25	10:35	
Water level (m)	6.722	6.713	6.709	6.704	6.7	
Depth of vertical (m)	7.5	9.2	10.51	8.1	6.4	
Vmean (m/s)	0.958	1.132	1.223	1.125	0.833	

### 3. Estimation of Scouring Depth around Piers

The maximum flood water level of the Red River at Thanh Tri Bridge site for designing is to be elevation 12.5 m.

Also, using the cross sectional profile of the Red River at Thanh Tri Bridge site, the deepest river bed to be encountered at the bridge pier locations will be at elevation minus (-) 3.80. Therefore, the deepest flow depth at the flood stage around bridge piers is expected to be 16.3 m.

Adopting Chiew's formula for estimating local scouring depth for circular piers ( the curve of the formula was plotted on the attached Fig. 1 ), the estimated Value of local scouring depth around the bridge piers resulted in as following:

$$d_o / b = 16.3 \text{ m} / 6.5 \text{ m} = 2.50, \text{ and } d_s / b = 0.89 \text{ ( See the Fig. 5.1 )}.$$

$$\text{Thus, } d_s = 0.89 \times 6.5 = 5.8 \text{ m}$$

Where,  $b$  = the diameter of the bridge pier

$d_o$  = the depth of the approaching flow depth

$d_s$  = the estimated local scouring depth around the bridge piers

Notes: 1. The effect of the river bed sediment size is negligible since Fig. 2(a) shows that for  $b/D > 50$  ( where  $D$  is the mean sediment size ), the correlation coefficient,  $K$  approaches 1.0.

2. If using the conservative formula such as Kothyari, Bask et al, etc., the scouring depth to be estimated will become higher. It is, however, that Chiew's formula is relevant for current engineering practice.

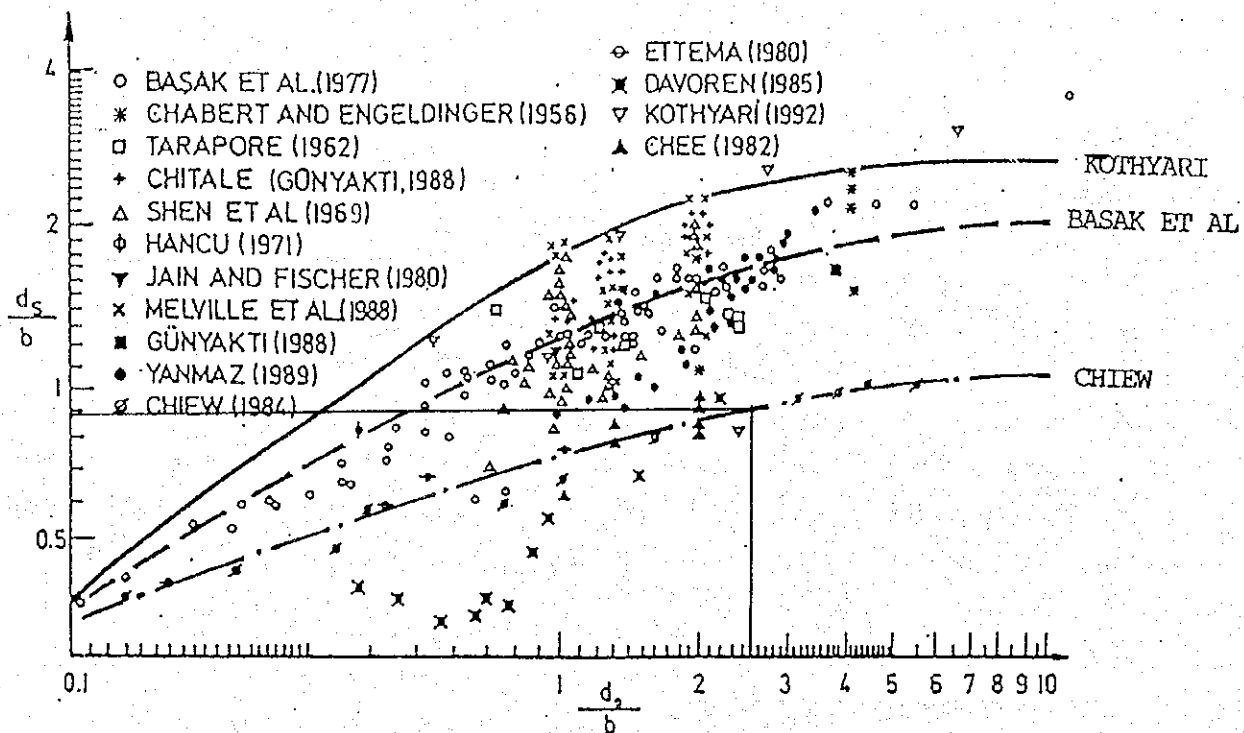


Fig. 5.1 Correlation between  $d_s/b$  and  $d_o/b$  for Cylindrical Piers

#### NOTATION

The following symbols are used in this paper:

- $a$  = thickness of abutment in flow section;
- $b$  = diameter of bridge pier;
- $C_a$  = annual capital cost;
- $C_c$  = capital cost;
- $C_{d,m}$  = annual depreciation and maintenance cost;
- $C_r$  = damage risk cost;
- $D$  = mean sediment size;
- $D'$  = total damage;
- $d$  = annual maximum precipitation;
- $d_o$  = depth of approach flow;
- $d_{d,R}$  = annual maximum direct runoff depth;
- $d_s$  = maximum local scour depth around pier;
- $d_s^*$  = maximum local scour depth around abutment;
- $F_r$  = Froude number;
- $i$  = rainfall intensity;
- $K$  = correction factor for sediment size;
- $K_s$  = correction factor for sediment gradation;
- $K_a$  = correction factor for abutment inclination;
- $p$  = exceedence probability;
- $Q$  = discharge;
- $Q_p$  = annual peak discharge;
- $T_r$  = return period;
- $t_p$  = time to peak;
- $u_*$  = shear velocity;
- $u_{*c}$  = critical shear velocity;
- $\phi$  = infiltration index;
- $\sigma_s$  = standard deviation of particle gradation; and
- $\theta$  = abutment inclination.



#### 4. Results of Settlement analyses (Table 5.1a & 2b)

Case 1 : Height of Embankment = 6 m ( Unchanged )

Time v.s. Settlements : Table 5.1a

U ( % )	<u>Clay Depth = 10 m</u>		<u>Clay Depth = 20 m</u>		<u>Clay Depth = 30 m</u>	
	S in cm	Time in Yr	S in cm	Time in Yr	S in cm	Time in Yr
0	0	0	0	0	0	0
10	2.14	0.04	3.05	0.18	3.59	0.396
20	4.28	0.17	6.1	0.68	7.18	1.53
30	6.42	0.39	9.15	1.56	10.77	3.52
40	8.56	0.69	12.2	2.77	14.36	6.24
50	10.7	1.08	15.25	4.34	17.95	9.77
60	12.8	1.56	18.3	6.25	21.54	14.08
70	14.98	2.13	21.35	8.51	25.13	19.14
80	17.12	2.77	24.4	11.11	28.72	25
90	19.26	3.51	27.54	14.01	32.31	31.6
100	21.4	4.33	30.5	17.34	35.9	39.02

Case 2 : Thickness of Clay Layer = 30 m ( Constant )

Time v.s. Settlements : Table 5.1b

U ( % )	Time in Yr	H =	<u>Settlement in cm</u>			
			6 m	8 m	10m	12 m
0	0		0	0	0	0
10	0.396		3.59	4.53	5.42	6.18
20	1.53		7.18	9.06	10.84	12.36
30	3.52		10.77	13.59	16.26	18.54
40	6.24		14.36	18.12	21.68	24.72
50	9.77		17.95	22.65	27.1	30.9
60	14.08		21.54	27.18	32.52	37.08
70	19.14		25.13	31.71	37.94	43.26
80	25		28.72	36.24	43.36	49.44
90	31.6		32.31	40.77	48.78	55.62
100	39.02		35.9	45.3	54.2	61.8

**Legend:** U = Degree of consolidation in %  
 S = Settlements in cm  
 H = Height of the embankment in m

# 5. Influence Values for Vertical Stresses in a Semi-infinite Mass Due to an Embankment Loading

By J. O. Osterburg

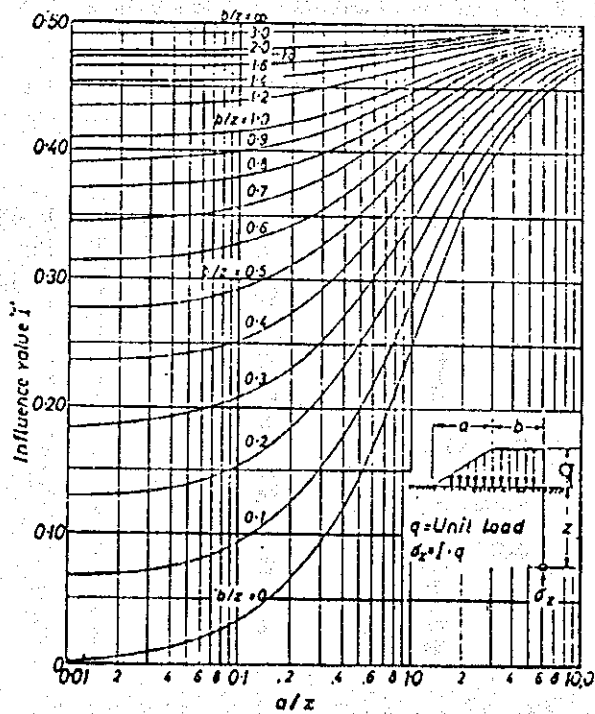
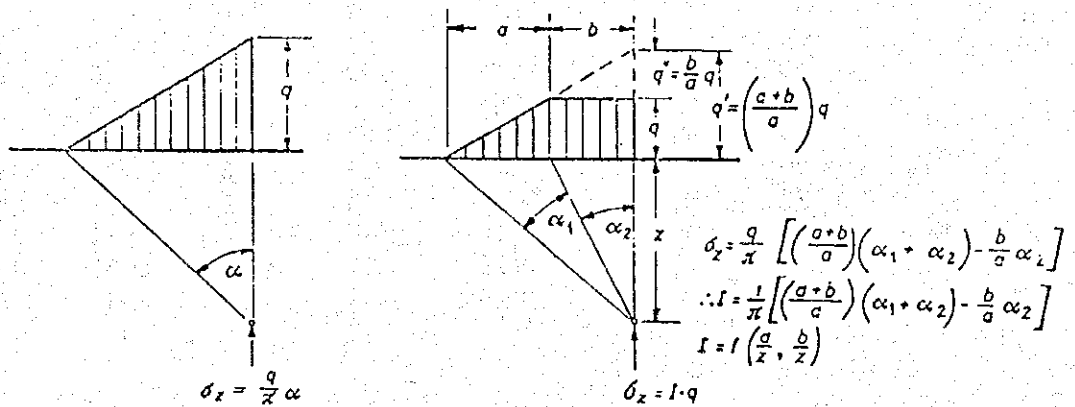
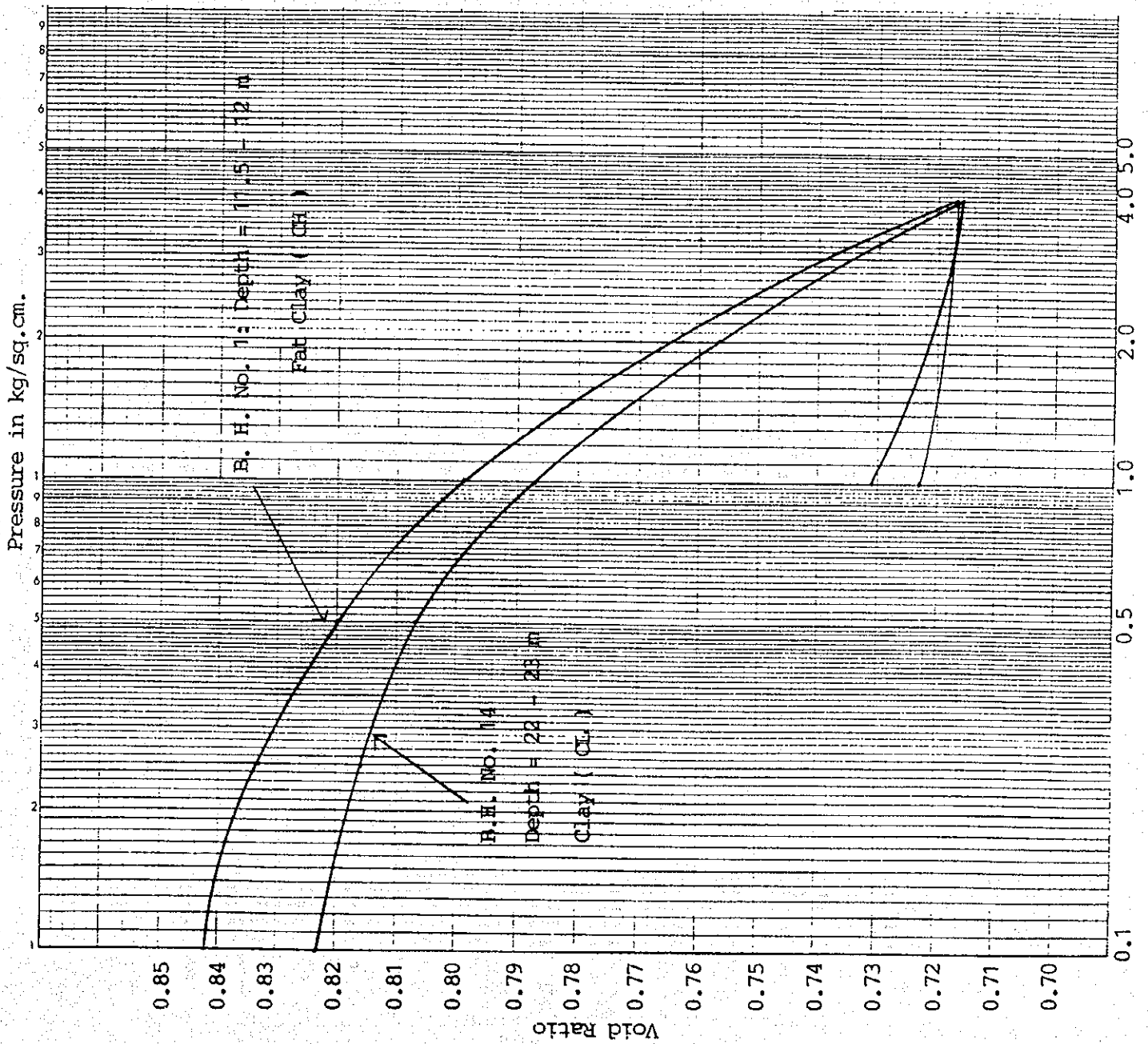


Fig. 5.4

Influence chart for vertical stress embankment loading infinite extent. Boussinesq case

6. Consolidation  $e - \log p$  Curves  
used in Settlement Analysess

Fig. 5.5



**7. Possible base course material pits  
for the proposed highway construction**

**Table 5.2**

Pit No.	1	2	3	4
<b>Name of Pit</b>	<b>MIEU MON Quarry</b>	<b>DA BAC Quarry</b>	<b>XOM VAN Quarry</b>	<b>PIONEER Quarry</b>
<b>Location</b>	Mieu Mon approx. 40km from Hanoi	Mieu Mon approx. 50km from Hanoi	Mieu Mon approx. 50km from Hanoi	Kien Khe approx. 60km from Hanoi
<b>Type of material</b>	Lime stone	Lime stone	Lime stone	Lime stone
<b>Capacity</b>	Two crushers	One crusher	One crusher	1,000 ton/day
<b>Price</b>	US \$ 2.52-5.04 per ton	Same	Same	31,000dong/ton
<b>Condition</b>	At site depending on the sizes	Same	Same	They can deliver the material by rail freight
<b>CBR (Soaked)</b>	74-98		74-96	78-100

**8. Possible Sand Borrow Pits  
for the Proposed Highway Embankment      Table 5.3**

Pit No.	1	2	3	4	5
<b>Name of Pit</b>	LINH NAM	THANH TRI	PHO DONG	PHU THUONG (Tayho D1)	BAI BAC
<b>Location</b>	Shore of Red River	Shore of Red River	Duong river	In the Red River	Shore of Red River
<b>Capacity</b>	10,000 m <sup>3</sup> /4days	12,000 m <sup>3</sup> /day	unknown	unknown	10,000 m <sup>3</sup> /days
<b>Price</b>	32,000 dong/m <sup>3</sup>	11,000 dong/m <sup>3</sup>	unknown	unknown	13,000 dong/m <sup>3</sup>
<b>Condition</b>	on delivery	on site			on site
<b>CBR (Soaked)</b>	11.5 – 18.0		13.5 – 21.0		14.0 - 19.50

# 9. Geological Longitudinal Profile

Scale: 1/500 vertical and 1/2000 horizontal

