

URBAN TRANSPORT STUDY
IN
GREATER METROPOLITAN AREAS
OF
GEORGETOWN, BUTTERWORTH AND BUKIT MERTAJAM
MALAYSIA

SCREEN LINE SURVEY

TECHNICAL REPORT — 04



AUGUST, 1979

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This report is a supplement to the main report of our study and it is written to meet the pressing demand for a technical report presently. Although this report fails to meet the requirement of a complete technical report, it may be rewritten in a more refined form for future use. This report section by section would be especially useful as a refernece for various purposes, for example, manual of survey, data edition, explanation of methodology, detailed analysis, etc.

SCREEN LINE SURVEY

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SCREEN LINE SURVEY

1

Objectives and Outline

The objective of this survey is to estimate the traffic volume of road-users using a particular road. The results of this screen-line survey will be used for examination and correction of traffic movements obtained from the origin-destination survey. It is necessary to examine the traffic movements estimated from the home-interview survey for a selected number of samples by the actual traffic volumes that will be obtained from this survey.

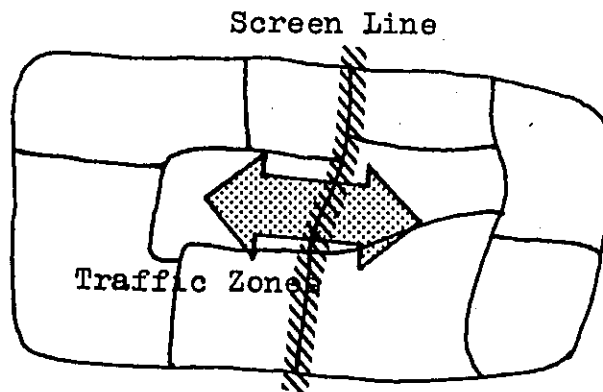


Fig.1 Out-Line of Screen Line

As the traffic movement by O - D Survey was estimated in the form of an Origin and Destination table, it was thought best that a screen-line be used to distinguish one traffic zone from the other. In most cases, natural barriers such as rivers, hills, sea etc. were frequently used to remote the screen-line due to the ease with which the volume of traffic between the zones can be noted.

Due to the reason mentioned above, three screen-lines were selected besides the Malacca Straits which forms a natural line separating the State of Penang into 2 regions that is Penang Island and Province Wellesley. This report only contains the results from three screen-lines, A, B and C shown in Figure 2.

There being no proper natural barrier in Penang Island to serve as a boundary, two traffic bottle necks were chosen for screen-lines. These were at the border of Georgetown to Tanjung Tokong (Screen-Line A) and at Bagan Baru (Screen-Line B).

Screen-line C is the River Prai which separates Province Wellesley into 2 parts that are linked by 2 bridges.

This survey involves vehicles of all categories that use roads, ranging from heavy trailers to bicycles. Surveyors were employed to carry out the task of recording the traffic-volumes at these screen-lines.

2 THE SURVEY PROCEDURE

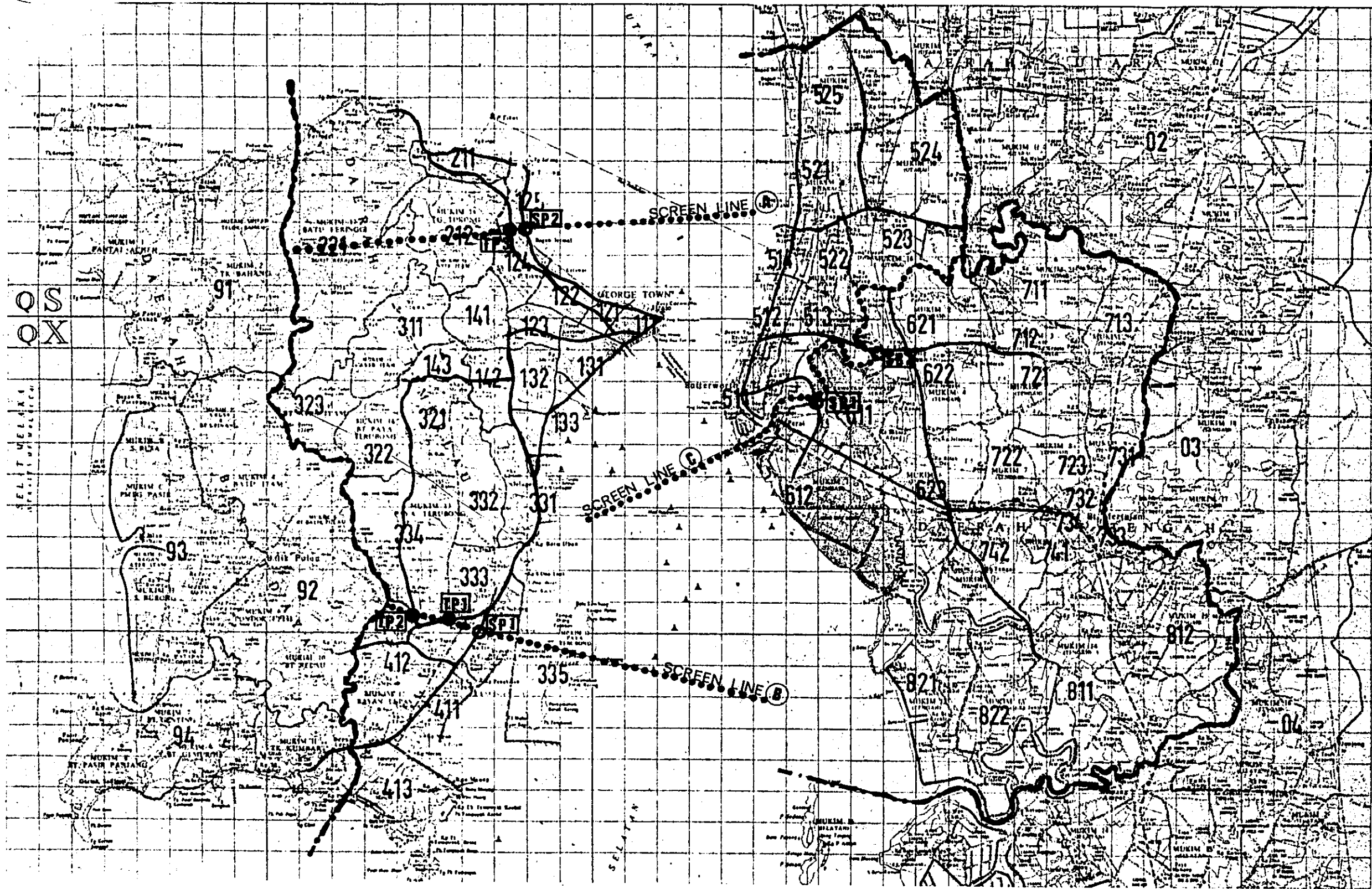
2-1 Date and Location of Survey Points

In order to ensure that all of the traffic crossing the screen-line is counted, 7 survey stations were selected. (Table 1) The survey was conducted on normal working days from June 5th to June 13th between 6.00 a.m. to 10.00 p.m. for major roads and from 7.00 a.m. to 7.00 p.m. for minor roads.

TABLE 1. DATE AND LOCATIONS OF SURVEY STATIONS.

<u>STATIONS</u>		<u>NAME OF THE ROAD AND DATE OF SURVEY</u>	<u>DIRECTION</u>	<u>DURATION IN HOURS</u>
SCREEN (B)	SP 1	Bayan Lepas Road 5th June	Bayan Lepas - Georgetown Georgetown - Bayan Lepas	16
	TP 1	Sungai Ara Road 11th June	Sungai Nibong - Relau Relau - Sungai Nibong	12
	TP 2	Paya Terubong Road 12th June	Air Itam - Relau Relau - Air Itam	12
SCREEN (A)	SP 2	Tanjung Tokong Road 7th June	Georgetown - Tanjung Tokong Tanjung Tokong - Georgetown	16
	TP 3	Mount Erskine 13th June	Tanjung Bunga - Bagan Jermal Bagan Jermal - Tanjung Bunga	12
SCREEN (C)	SB 1	Chain Ferry Road 5th June	Prai - Butterworth Butterworth - Prai	16
	SB 2	Jalan Permatang Pauh 7th June	Butterworth - Permatang Pauh Permatang Pauh - Butterworth	16

Figure 2. LOCATION OF SCREEN LINES AND SURVEY STATIONS



Method used to ascertain Traffic Volume

Each Assistant Supervisor was incharge of a team of 12 members including 2 clerks.

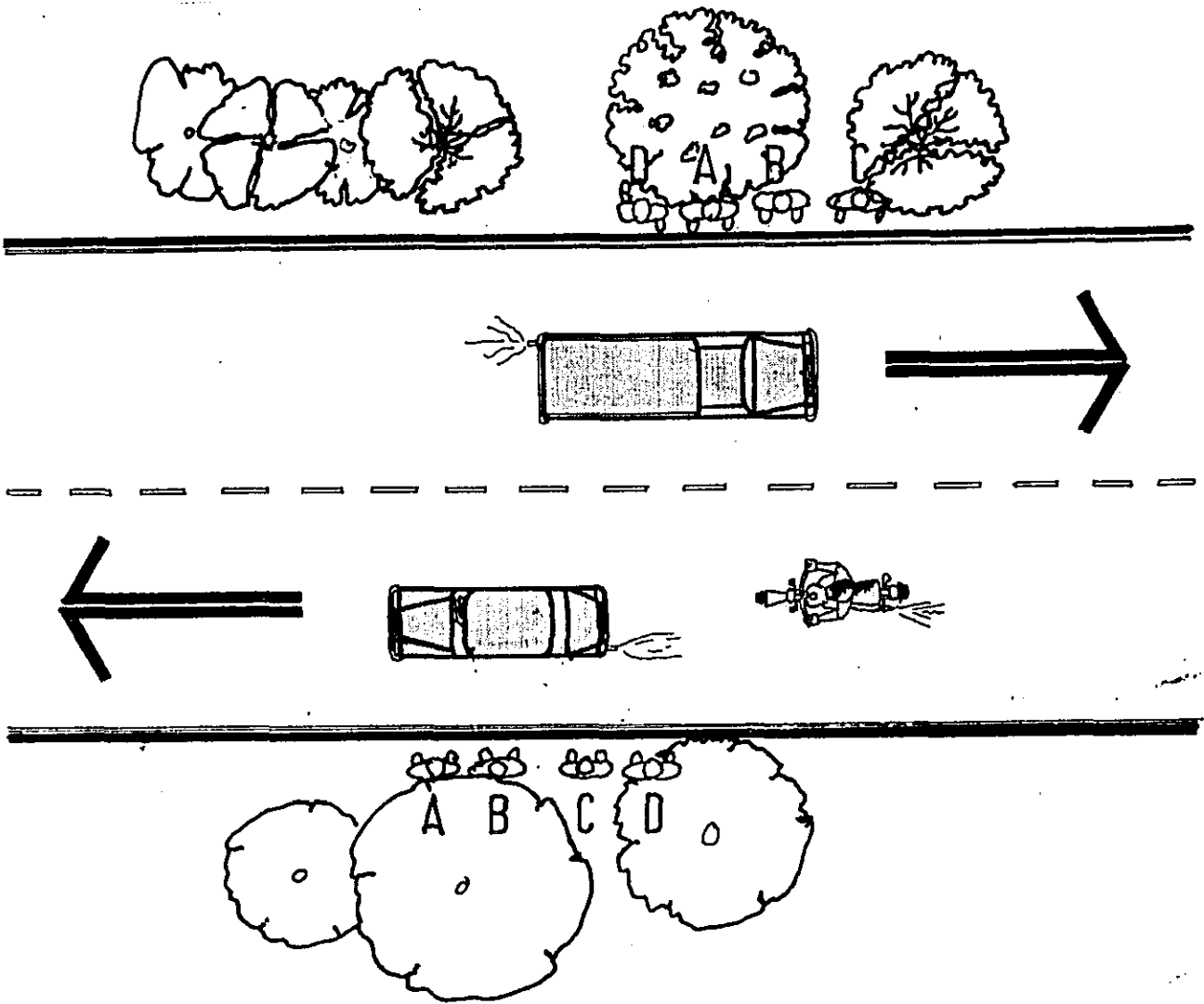
5 surveyors with different tasks were assigned to record the traffic volume for each direction with each clerk supervising each.

(For further details - see 'Task of Surveyor' Table below)

TABLE 2. TASK OF SURVEYOR

TASK		Type of Vehicles
A	1. 2. 3.	MOTOR CARS TAXIS VAN AND PICK-UP
B	1. 2. 3.	MEDIUM SIZE LORRIES LORRIES WITH 3 AXLES AND TRAILERS BUSES
C	1. 2. 3.	MOTOR CYCLES AND SCOOTERS TRISHAWS BICYCLES OTHERS
D		TO RECORD THE RESULTS OF SURVEY
E		TO TAKE A REST (1 HOUR)

Figure 3. TASK OF SURVEYOR AND THEIR POSITION



The sketch shows the position and task of the surveyors for each direction of the roads.

One survey team was divided into 2 groups. Each group was responsible for one direction. Hence 4 surveyors and a clerk was responsible for each direction and they followed the task as planned in the work schedule.

RESULTS:

Traffic volume counted at each survey station is shown in Table 3 and Table 4 to 17 show the volume by time zones.

TABLE 3. VOLUME BY TYPE OF VEHICLES.

TYPE OF VOLUME NAME OF ROADS	MOTOR CARS	TAXIS	VAN AND PICK-UP	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES AND TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TOTAL
Bayan Lepas Road	7820	686	688	804	84	1699	8573	20354
	38.4	3.4	3.4	3.9	0.4	8.34	42.1	(100.0)
Sungai Ara Road	776	44	158	336	16	324	1714	3368
	23.0	1.3	4.69	9.98	0.5	9.6	50.9	(100.0)
Paya Terubong Road	346	8	39	170	4	79	798	1444
	24.0	0.6	2.7	11.8	0.3	5.5	55.3	(100.0)
Tanjung Tokong Road	12442	1071	887	625	69	749	8451	24294
	51.2	4.4	3.7	2.6	0.3	3.1	44.8	(100.0)
Mount Erskine	3340	64	267	175	4	284	3414	7548
	44.2	0.9	3.5	2.3	0.1	3.8	45.2	(100.0)
Chain Ferry Road	12799	1051	1919	954	2514	1214	12868	33259
	38.5	3.2	5.8	2.9	7.6	3.7	38.5	(100.0)
Jalan Permatang Pauh	3410	29	593	67	868	468	6898	12903
	26.4	0.2	4.6	5.0	6.7	3.6	53.5	(100.0)

Table 4: SCREEN LINE TRAFFIC SURVEY
 SP 1 BAYANLEPAS TO GEORGETOWN

5/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	100	22	18	6	5	111	257	-	27	-	546
7 - 8	287	14	11	6	6	135	507	-	56	-	1022
8 - 9	188	18	15	19	9	92	263	-	6	-	610
9 - 10	165	21	19	18	3	18	146	-	16	-	406
10-11	224	60	40	43	5	18	205	-	18	-	613
11-12	249	34	35	64	9	14	124	-	5	1	535
12-13	254	19	24	39	1	20	226	-	16	-	599
13-14	229	23	27	21	-	22	206	-	19	-	547
14-15	213	15	36	20	1	53	212	-	9	5	564
15-16	268	24	36	37	1	129	307	-	11	1	814
16-17	342	37	46	32	2	83	304	-	17	-	863
17-18	512	7	21	29	1	83	604	-	33	-	1290
18-19	386	36	28	21	0	29	335	-	27	1	863
19-20	214	12	4	11	2	18	268	-	23	-	552
20-21	170	6	9	2	-	5	181	-	9	-	382
21-22	132	16	8	2	-	6	138	-	9	-	311
TOTAL	3933	364	377	370	45	836	4283	-	301	8	10517

Table 5: SP 1 GEORGETOWN TO BAYAN LEPAS

5/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TEXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	209	12	12	6	-	162	312	-	35	-	748
7 - 8	493	13	10	14	-	109	690	-	55	-	1384
8 - 9	313	13	16	54	-	65	396	-	32	1	890
9 -10	221	29	16	48	3	15	204	-	13	4	547
10-11	247	25	41	43	1	18	195	-	11	-	581
11-12	157	29	35	33	1	18	187	-	10	1	471
12-13	227	24	30	33	1	13	210	-	10	-	548
13-14	221	29	20	40	3	35	202	-	27	-	577
14-15	290	19	31	45	2	153	305	-	12	-	857
15-16	204	25	25	32	11	48	281	-	23	-	649
16-17	271	30	22	33	11	109	238	-	25	-	739
17-18	253	17	15	18	2	39	203	-	21	-	569
18-19	237	23	10	28	1	28	306	-	42	1	676
19-20	154	9	12	9	-	21	229	-	7	-	441
20-21	158	13	9	1	1	5	154	-	8	2	351
21-22	232	12	7	3	2	25	178	-	4	-	463
TOTAL	3887	322	311	434	39	863	4290	-	335	10	10491

Table 6: TP 1 SUNGAI NIBONG TO RELAU

11/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXILES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
7 - 8	34	-	5	15	1	10	61	-	27	-	153
8 - 9	17	-	6	21	-	20	51	-	19	-	134
9 -10	23	-	6	15	-	7	42	-	10	1	104
10-11	36	3	6	18	1	9	44	-	21	-	138
11-12	28	3	11	19	-	11	48	-	2	-	122
12-13	11	-	3	15	-	12	45	-	4	-	90
13-14	40	2	7	10	-	14	74	-	22	-	169
14-15	29	3	14	6	1	29	78	-	26	-	186
15-16	25	3	4	8	-	11	57	-	27	-	139
16-17	30	5	3	19	1	13	62	-	14	1	148
17-18	36	3	1	8	-	13	96	-	20	1	178
18-19	56	3	4	9	4	17	75	-	16	1	185
TOTAL	369	25	70	163	8	166	733	-	208	4	1746

Table 7: TP 1 RELAU TO SUNGEI NIBONG

11/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
7 - 8	44	4	7	11	2	20	174	-	20	-	282
8 - 9	41	1	8	12	1	8	126	-	7	-	204
9 -10	39	2	8	21	1	12	85	-	10	-	178
10-11	29	2	2	20	0	8	73	-	15	-	149
11-12	28	2	10	22	2	16	56	-	17	-	153
12-13	32	0	7	12	0	10	66	-	10	-	137
13-14	54	0	12	16	0	15	41	-	12	2	152
14-15	29	2	9	12	0	13	75	-	10	2	152
15-16	28	3	9	11	1	16	59	-	11	1	139
16-17	9	0	8	13	0	12	44	-	15	0	101
17-18	26	1	6	18	0	12	87	-	16	2	168
18-19	48	2	2	5	1	16	95	-	35	3	207
TOTAL	407	19	88	173	8	158	981	-	178	10	2022

Table 8: TP 2 AIR ITAM TO RELAU

12/6/79

TYPE TIME ZONE	A			B		C					(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHANS	BICYCLES	OTHERS	TOTAL
7 - 8	14	-	-	3	-	2	57	-	3	1	80
8 - 9	25	-	2	3	-	-	41	-	4	-	76
9 -10	24	-	4	11	-	3	41	-	3	-	86
10-11	20	1	2	10	-	4	27	-	9	-	73
11-12	13	-	-	9	-	5	13	1	3	2	45
12-13	16	-	-	9	-	4	21	-	4	1	55
13-14	12	1	1	7	-	5	24	-	5	-	55
14-15	9	1	-	15	-	4	25	-	4	-	58
15-16	25	-	-	8	-	2	32	-	4	1	72
16-17	16	2	5	2	-	1	43	-	16	1	86
17-18	16	-	3	5	-	4	21	-	16	1	66
18-19	10	-	2	5	-	5	33	-	12	2	69
TOTAL	200	5	19	87	-	39	378	-	83	10	821

Table 9: TP 2 RELAU TO AIR ITAM

12/6/79

TYPE	A			B			C			(11)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
7 - 8	7	1	1	-	-	2	45	-	3	4	63
8 - 9	10	-	-	13	-	2	35	-	5	2	67
9 -10	13	-	-	2	-	2	39	-	7	1	64
10-11	16	-	6	15	-	8	47	-	6	-	98
11-12	3	-	6	9	-	4	18	-	1	1	42
12-13	14	-	-	5	-	1	31	-	-	-	51
13-14	9	1	1	8	1	7	38	-	18	-	83
14-15	15	-	-	7	-	3	22	-	7	-	54
15-16	13	-	1	9	2	3	38	-	6	2	74
16-17	11	1	2	11	-	3	25	-	3	1	57
17-18	24	-	2	3	1	2	44	-	-	-	76
18-19	11	-	1	1	-	3	38	-	5	-	59
TOTAL	146	3	20	83	4	40	420	-	61	11	788

Table 10: SP 2 GEORGETOWN TO TG. TOKONG

7/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	74	7	26	10	4	31	158	-	81	3	394
7 - 8	258	23	39	14	5	56	301	2	78	2	778
8 - 9	247	20	26	19	3	26	203	-	79	1	624
9 -10	244	34	37	36	12	20	193	3	45	3	627
10-11	313	46	31	32	11	12	178	3	49	1	676
11-12	290	45	56	25	1	12	200	-	43	1	674
12-13	409	29	46	16	-	16	223	1	64	2	806
13-14	553	29	67	27	1	27	296	2	157	-	1159
14-15	377	39	30	25	-	17	204	5	129	7	833
15-16	342	37	44	19	2	22	217	3	85	2	773
16-17	465	34	34	25	-	11	245	-	103	4	921
17-18	589	36	19	15	1	36	368	1	132	3	1200
18-19	613	36	30	10	-	30	477	6	192	1	1395
19-20	508	28	22	5	-	12	305	1	98	1	980
20-21	450	25	12	8	-	8	195	-	24	-	720
21-22	428	30	6	7	-	11	193	1	30	1	707
TOTAL	6160	498	525	293	40	348	3956	28	1389	32	13269

Table 11: SP 2 TANJUNG TOKONG TO GEBERGETOWN

7/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	217	6	37	3	0	30	276	2	268	1	840
7 - 8	603	20	36	12	1	42	488	6	198	-	1396
8 - 9	556	19	38	19	3	32	431	2	87	3	1190
9 -10	415	47	24	25	1	12	270	1	76	4	880
10-11	360	50	16	32	-	8	201	4	50	-	721
11-12	303	44	39	39	2	10	206	1	48	-	692
12-13	339	40	25	19	-	36	177	-	55	3	704
13-14	423	45	19	31	1	38	297	1	77	1	933
14-15	413	31	20	31	1	60	215	2	62	-	835
15-16	326	41	21	23	4	15	230	1	65	-	726
16-17	346	40	32	31	14	30	315	1	98	2	909
17-18	394	45	16	30	1	42	402	-	97	1	1028
18-19	442	35	11	17	1	17	397	1	84	-	987
19-20	475	38	15	11	-	13	243	-	43	-	838
20-21	369	38	6	3	-	7	243	1	30	1	698
21-22	301	34	2	6	-	9	122	-	16	-	490
TOTAL	6282	573	362	332	29	401	4495	23	1354	16	13867

Table 12: TP 3 TANJUNG BUNGA TO BAGAN JERMAL

13/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CABS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES AND TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
7 - 8	261	-	9	1	-	4	159	-	26	1	461
8 - 9	195	1	3	6	-	3	115	-	7	1	331
9 -10	110	-	6	2	-	6	100	1	9	-	234
10-11	69	-	6	2	-	3	64	1	14	2	161
11-12	90	6	12	6	-	11	84	-	22	-	231
12-13	148	2	10	1	-	21	119	-	29	1	331
13-14	173	-	19	1	-	26	128	1	18	-	366
14-15	124	2	19	12	1	10	122	1	13	-	304
15-16	106	3	13	9	-	9	122	-	8	-	270
16-17	128	3	12	9	1	9	104	-	10	-	546
17-18	176	3	9	7	1	15	244	-	27	1	483
18-19	169	1	5	7	1	21	166	-	17	-	387
TOTAL	1749	21	123	63	4	138	1527	4	200	6	4105

Table 13: TP 3 BAGAN JERMAL TO TANJUNG BUNGA

13/6/79

TYPE TIME ZONE	A			B			B			(11)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
7 - 8	120	4	21	4	-	20	211	-	16	2	398
8 - 9	117	4	8	13	-	7	190	-	24	1	364
9 -10	83	9	13	7	-	6	100	1	10	-	229
10-11	120	4	13	14	-	3	143	-	20	-	317
11-12	87	3	17	9	-	12	105	-	14	-	247
12-12	134	3	15	8	-	12	135	-	11	-	318
13-14	193	2	15	9	-	19	158	-	29	-	425
14-15	106	2	14	8	-	21	158	-	36	2	347
15-16	98	4	12	10	-	8	87	-	15	-	234
16-17	174	5	8	6	-	10	127	-	10	-	340
17-18	194	3	4	17	-	8	223	-	19	4	472
18-19	165	-	4	7	-	20	250	-	27	-	473
TOTAL	1591	43	144	112	-	146	1887	1	231	9	4164

Table 14: SB 1 PRAI TO BUTTERWORTH

7/6/79

TYPE TIME ZONE	A			B			C			(11)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)
	MOTOR CARS	TAXIS	VAN AND PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXIES AND TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	130	18	18	7	43	42	217	0	40	0	513
7 - 8	429	31	49	12	84	71	727	0	82	7	1492
8 - 9	448	50	51	38	113	61	445	0	50	2	1258
9 -10	508	48	106	61	142	31	399	0	30	0	1325
10-11	355	34	65	36	88	17	224	0	20	2	841
11-12	377	36	64	39	131	23	358	0	38	2	1068
12-13	433	36	58	19	93	23	377	0	34	2	1075
13-14	489	38	70	23	92	22	319	0	32	0	1085
14-15	502	37	84	49	114	32	434	-	39	3	1294
15-16	338	35	63	32	84	57	421	-	54	2	1086
16-17	420	40	57	39	108	43	554	0	73	2	1336
17-18	674	50	102	27	77	74	874	0	142	3	2023
18-19	279	27	20	9	30	22	338	0	36	1	762
19-20	393	24	31	5	33	26	368	0	35	0	915
20-21	373	16	19	8	30	19	305	0	18	3	791
21-22	281	8	18	2	20	11	170	0	8	1	519
TOTAL	6429	528	875	406	1282	574	6530	0	731	30	17385

Table 15: SB 1 BUTTERWORTH TO PRAI

7/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	124	7	20	5	12	61	348	0	92	0	669
7 - 8	258	24	44	10	52	58	855	0	221	3	1525
8 - 9	449	25	95	33	105	79	776	0	45	3	1610
9 -10	444	52	89	53	126	25	343	0	33	3	1168
10-11	402	38	108	47	130	30	281	0	15	0	1051
11-12	486	39	92	54	112	23	317	0	20	2	1145
12-13	430	46	71	46	84	23	373	0	26	3	1102
13-14	460	36	81	30	121	24	290	2	18	0	1062
14-15	429	38	86	84	68	59	373	1	52	0	1190
15-16	420	52	52	98	44	42	345	0	40	1	1094
16-17	501	37	93	25	103	60	386	4	52	1	1262
17-18	489	42	62	18	105	58	299	0	38	0	1111
18-19	480	39	66	14	64	38	407	0	60	2	1170
19-20	317	23	38	25	28	24	311	0	21	2	789
20-21	382	15	34	6	47	16	307	2	10	0	819
21-22	299	10	13	0	31	20	267	0	18	0	658
TOTAL	6370	523	1044	548	1232	640	6278	9	761	20	17425

Table 16: SB 2 BUTTERWORTH TO PTG. PAUH

5/6/79

TYPE TIME ZONE	A			B			C				(11)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	MOTOR CARS	TAXIS	VAN & PICK-UPS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES AND TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	27	0	7	23	4	30	93	0	37	2	223
7 - 8	86	1	12	12	45	27	348	0	71	2	602
9 - 9	94	0	18	29	36	10	178	0	32	2	399
9 -10	81	1	21	35	29	7	118	0	29	4	321
10-11	115	4	39	33	42	12	137	0	34	1	417
11-12	102	0	23	31	44	16	166	0	50	1	433
12-13	115	0	34	28	34	13	181	0	86	0	491
13-14	85	0	14	18	32	15	158	0	40	1	363
14-15	102	2	20	29	47	15	122	0	28	0	365
15-16	125	1	24	39	43	20	221	0	90	1	564
16-17	118	0	26	26	47	16	279	0	134	1	647
17-18	155	0	17	19	18	14	464	0	273	4	964
18-19	132	2	12	18	17	14	336	0	114	0	645
19-20	85	0	9	3	4	12	231	0	57	0	401
20-21	105	1	12	4	5	10	188	0	32	0	357
21-22	102	0	9	3	4	12	138	0	31	0	299
TOTAL	1629	12	297	350	451	243	3358	0	1138	13	7491

Table 17: SB 2 PTC. PAUH TO BUTTERWORTH

5/6/79

TYPE TIME ZONE	A			B		C				(11)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)
	MOTOR CARS	TAXIS	VAN & PICKS	MEDIUM SIZE LORRIES	LORRIES WITH 3 AXLES & TRAILERS	BUSES	MOTOR CYCLES AND SCOOTERS	TRISHAWS	BICYCLES	OTHERS	TOTAL
6 - 7	40	0	13	4	4	22	212	0	184	1	480
7 - 8	122	0	11	16	15	20	554	0	361	0	1099
8 - 9	117	0	22	17	34	14	281	0	89	1	575
9 -10	102	2	23	23	46	8	171	0	35	0	410
10-11	88	3	24	33	33	9	129	0	28	1	348
11-12	125	0	22	25	35	13	142	0	34	2	398
12-13	83	5	5	22	27	11	180	0	59	2	394
13-14	104	0	18	23	30	20	171	0	39	0	405
14-15	116	1	24	32	38	20	220	0	76	0	527
15-16	102	0	22	15	32	8	145	0	23	2	349
16-17	125	0	25	18	57	12	154	0	32	1	404
17-18	143	1	26	30	31	22	332	0	54	0	639
18-19	148	1	18	12	29	17	288	0	35	4	552
19-20	142	2	18	4	12	11	255	0	26	0	470
20-21	122	2	17	9	8	8	178	0	18	1	363
21-22	102	0	8	4	6	10	128	0	27	0	285
TOTAL	1781	17	296	287	417	225	3540	0	1120	15	7698

