

### 3.2 Current Traffic Flow

#### 1) Cordon Line Traffic Flow

##### (1) Traffic Volume

Fig. 3.2.1 shows the cordon line traffic flow observed in Oct. 1987 on 24 hrs. basis for both directions. The road with the heaviest traffic was Alexandria Agriculture Road (47,300 pcu/day), followed by Upper Egypt Highway (26,400 pcu/day), and Ismailia Desert Road (26,000 pcu/day). The traffic volume on Alexandria Agriculture Road reaches the traffic capacity of a 4 lane highway.

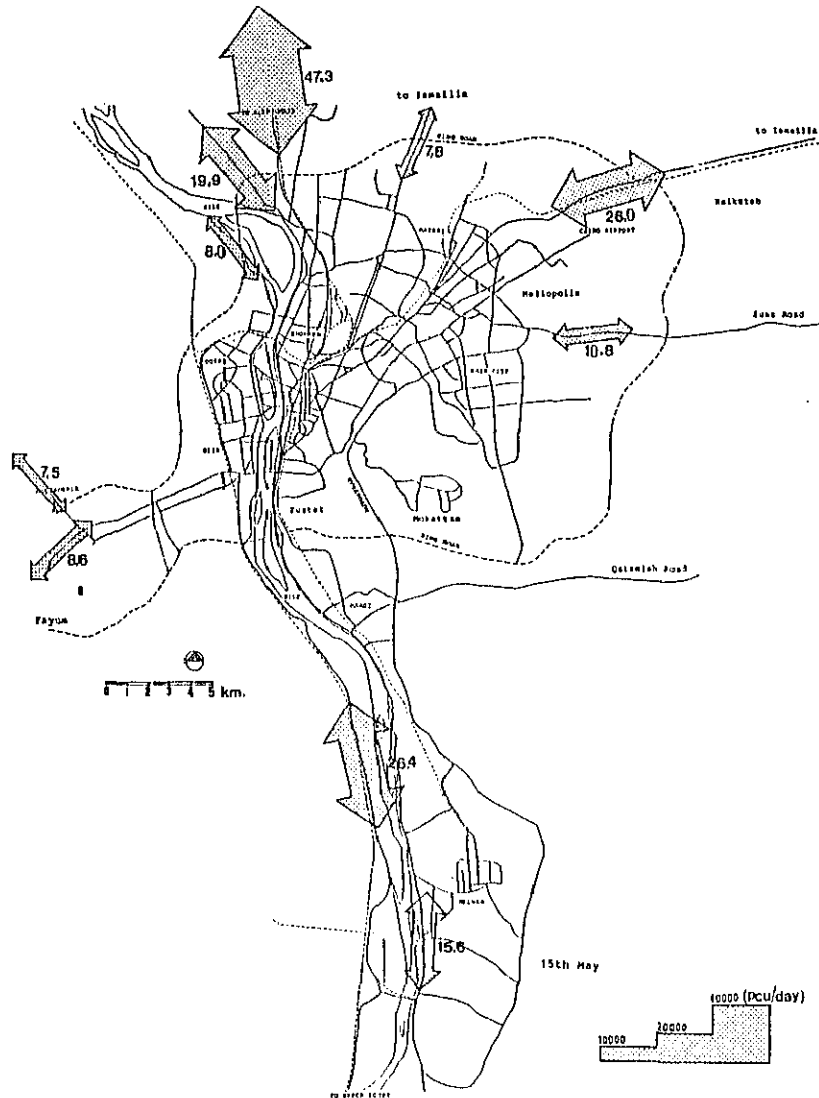


Fig. 3.2.1 Cordon Line Traffic Flow, 1987

## (2) Hourly Fluctuation

Fig. 3.2.2 shows the hourly fluctuation on each road. On Suez Desert Road at station no. 2 and Ismailia Desert Road at station no. 3, the outbound traffic peak in the morning (7:00 - 8:00) and the outbound traffic peak in the evening (15:00 - 16:00 or 17:00 - 18:00) are clearly observed.

The peak hour factors (PHF) were in the range of 6.6% on Alexandria Agriculture Road and 11.3% on Suez Desert Road. The 24 hrs. traffic to 16 hrs. traffic rates were 1.14, 1.17 and 1.06 on Upper Egypt Highway, Alexandria Agriculture Road and Ismailia Desert Road respectively.

## (3) Vehicle Type Composition

The roads which showed high passenger car rates were Ismailia Desert Road (65%) and Alexandria Desert Road (62%). On the other hand, the roads which showed high truck rates were Ismailia Agriculture Road (50%), Corniche (45%), and Upper Egypt Highway (Fig. 3.2.3).

## 2) Traffic Crossing Nile River

### (1) Traffic Volume

Fig. 3.2.4 shows the traffic volume crossing the Nile River, as observed in Oct. 1988. The total crossing traffic was 578,900 pcu/day. The Highest traffic flow was observed on the dual 5 lane 6th Oct. br. (192,000 pcu/day or 1/3 rd of the total crossing traffic), followed by 26th July br. (95,300 pcu/day) and Gamaa br. (94,100 pcu/day).

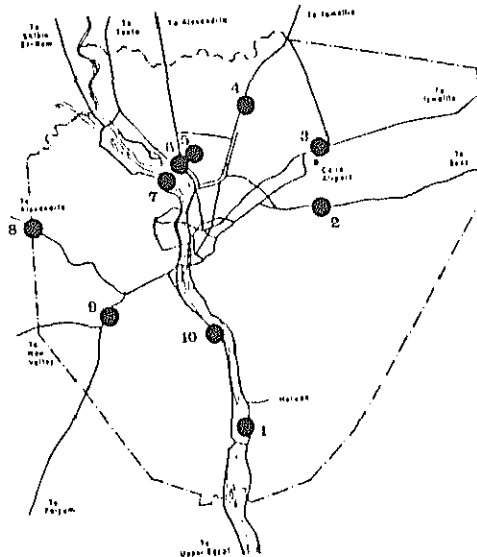


Fig. 3.2.2 Hourly Fluctuation of Cordon Line Traffic, 1987

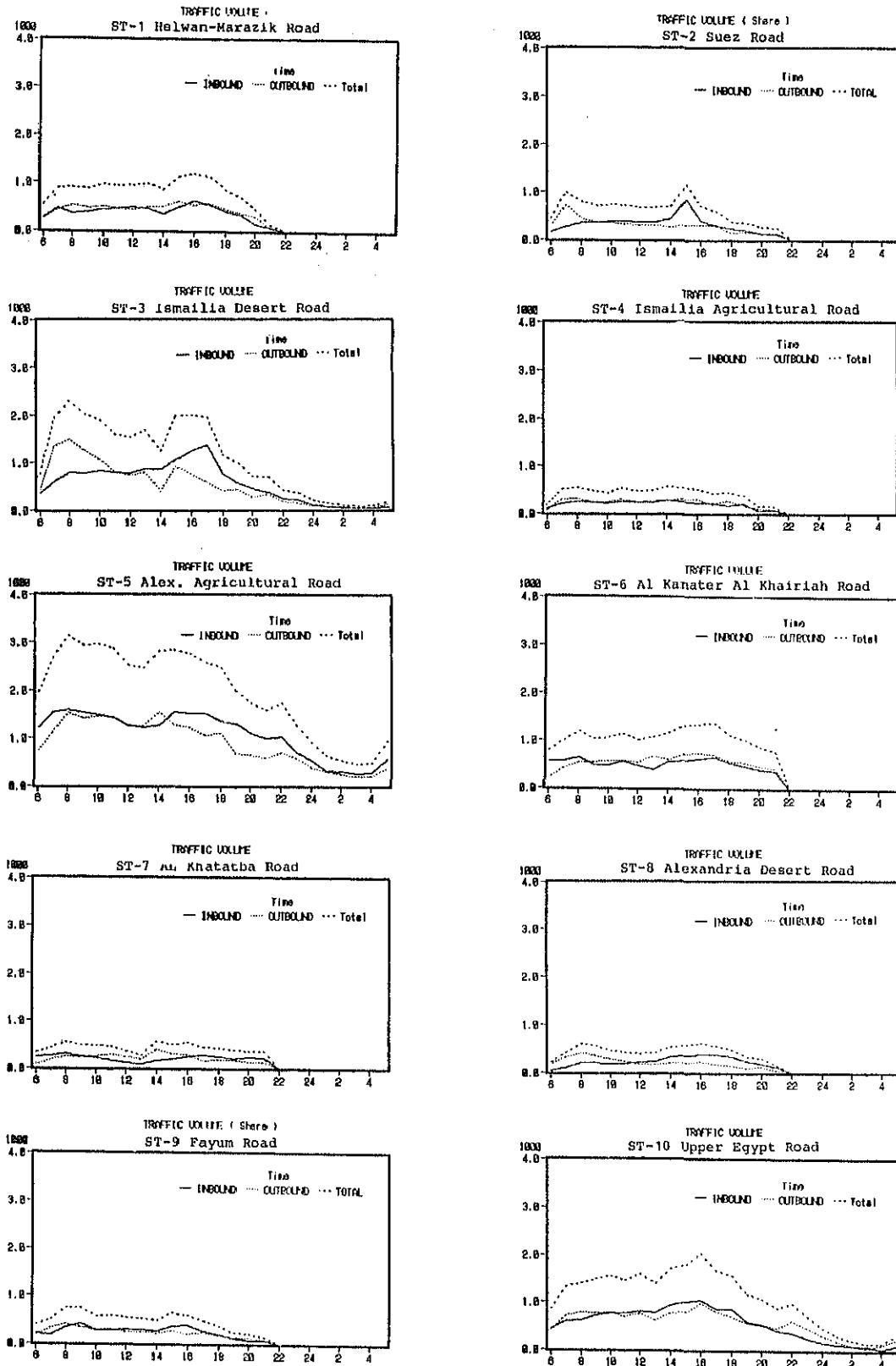


Fig. 3.2.2 (cont...)

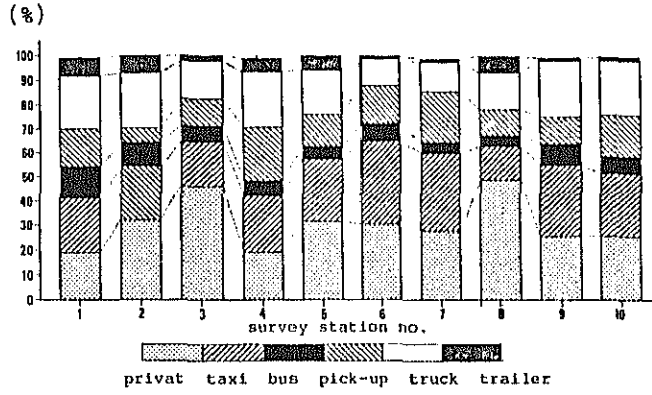


Fig. 3.2.3 Vehicle Type Composition of Cordon Line Traffic, 1987

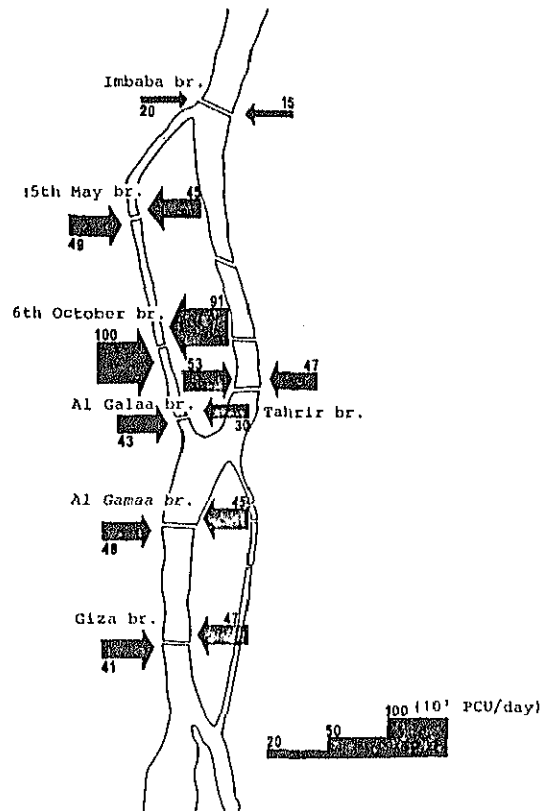


Fig. 3.2.4 Nile Screen Traffic Flow, 1987

Fig. 3.2.5 shows the traffic volume in 1983 and 1985 on the Nile River bridges. The traffic volume on Embaba and 26th July bridges have been growing by 1.5 times, while no significant changes are seen on the other bridges.

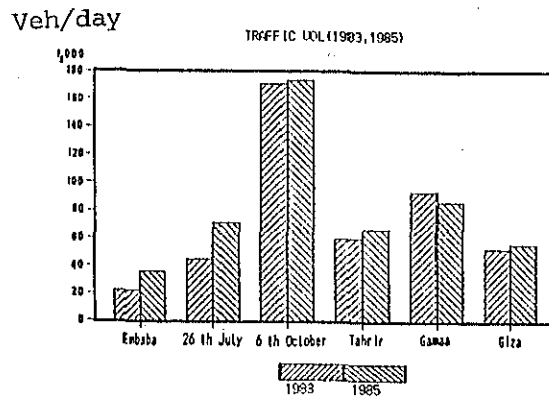


Fig. 3.2.5 1983 and 1985 Nile Screen Traffic Flow

### (2) Hourly Fluctuation

Fig. 3.2.6 shows the hourly fluctuation on 6 Nile River bridges. PHFs on these bridges are rather low ranging from 6.3% on 6th Oct. br. to 7.5% on Gamaa br. On 26th July and 6th Oct. bridges, the peak traffic flows to CBD are in the morning, 7:00 to 8:00 and 9:00 to 10:00. On 6th Oct. and Tahrir bridges, the traffic flow to CBD is prevailing throughout the day, while on Giza br., the peak evening traffic flow to Giza is at 16:00 to 17:00.

### (3) Vehicle Type Composition

Fig. 3.2.7 shows the vehicle type composition on 6 bridges on the Nile River. Embaba and Giza bridges are characterized by the high percentages of truck flow of 15.9% and 10.5% respectively, while the percentages of truck flow on the other bridges range between 3.4% to 4.6%. The percentage of bus flow (minibus and normal bus) on Tahrir br. is the highest at 7.2% and the lowest is on Embaba br. at 0.7%.

## 3) Traffic Flow in GCMR

### (1) Traffic Volume

Fig. 3.2.8 shows the daily traffic flow on the road sections and intersection entrances. The daily traffic flow on major roads are shown in Table 3.2.1.

The heaviest traffic flow was observed on Orouba st. in Heliopolis area. The two arterials in Giza; King Faisal and Al Ahram streets carry almost the same traffic flow. On the north-south routes along Nile river, Corniche st. in Giza carries slightly heavier traffic than that carried by Corniche st. in Cairo. Compared to the traffic flow on arterials outside CBD, the traffic flow on arterials in CBD is low despite the heavier congestion.

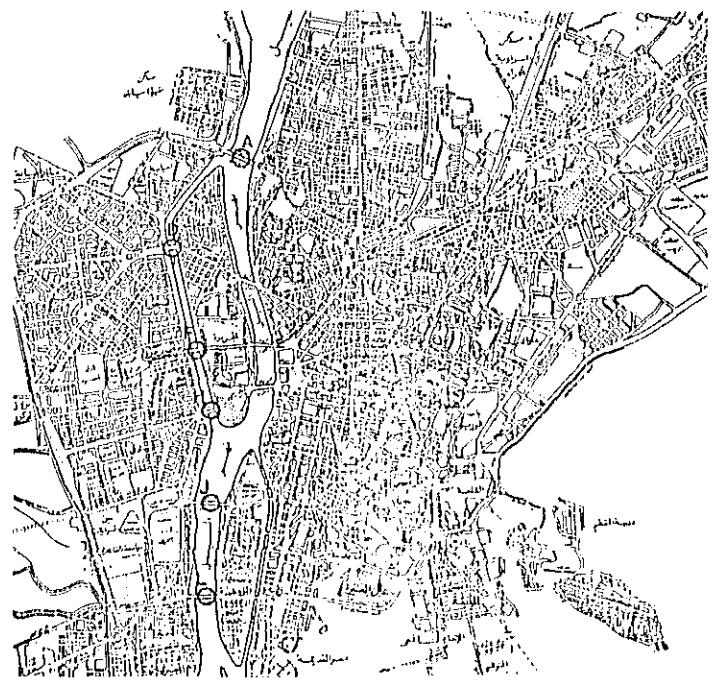
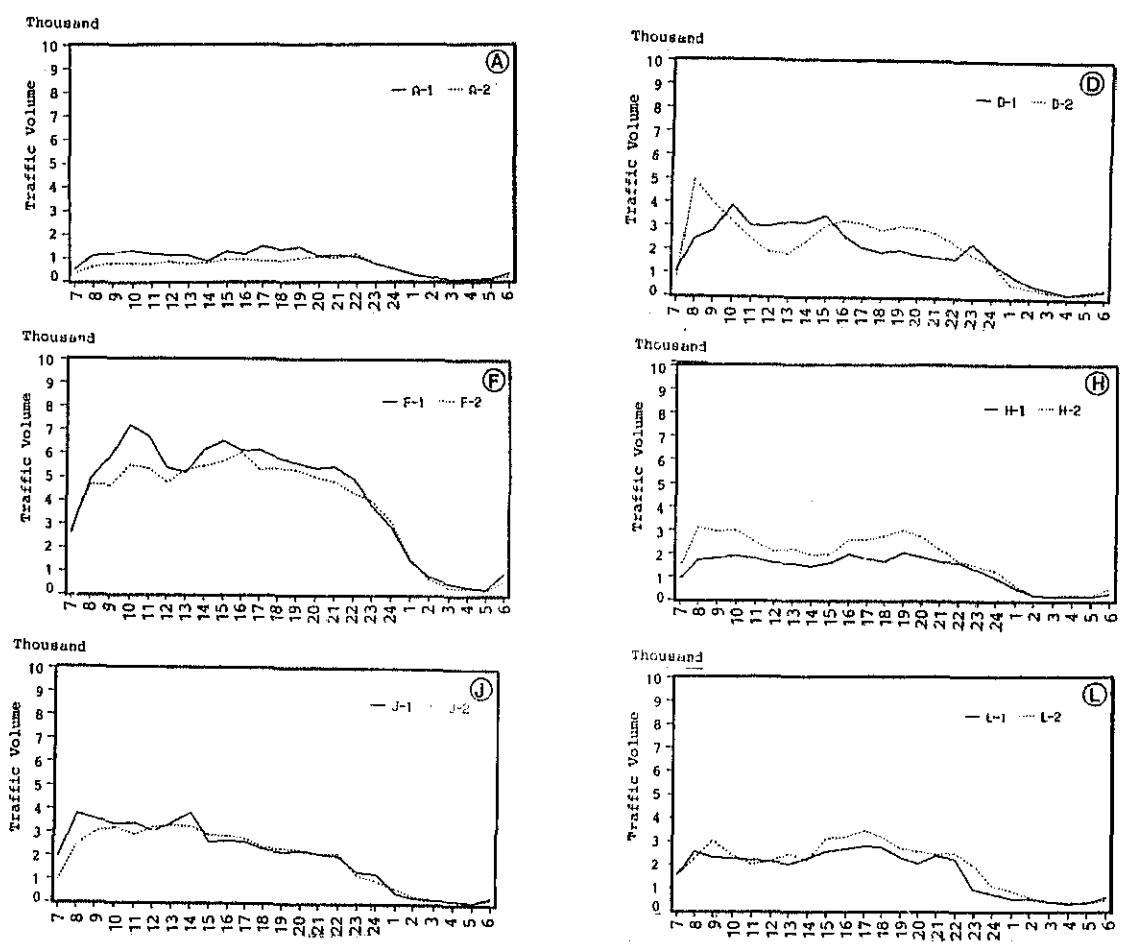


Fig. 3.2.6 Hourly Fluctuation of Nile Screen Traffic, 1987

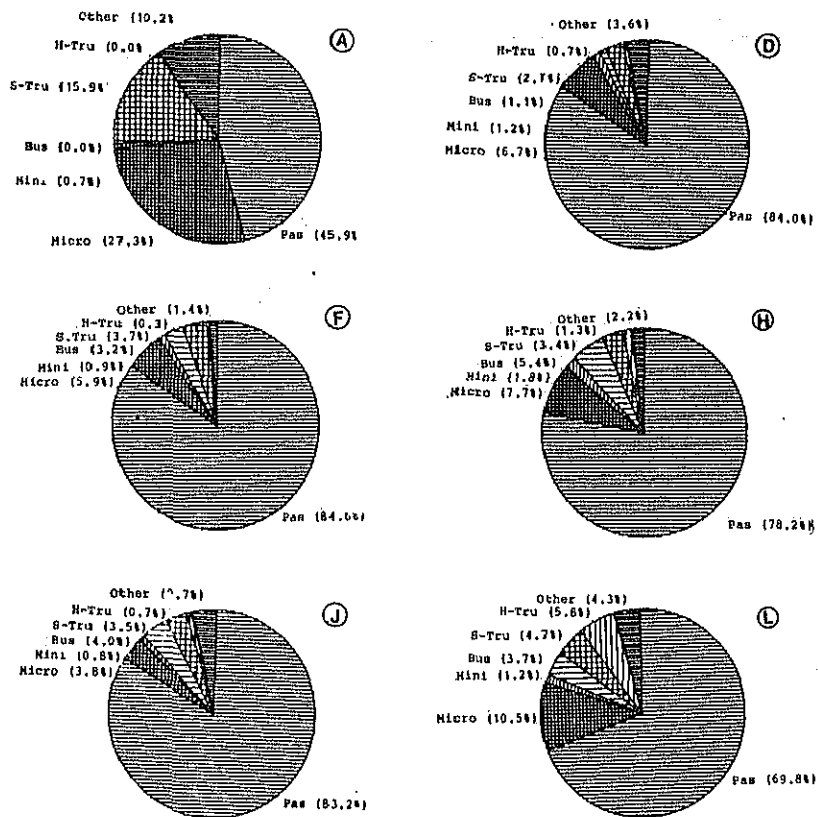


Fig. 3.2.7 Vehicle Type Composition of Nile Screen Traffic, 1987

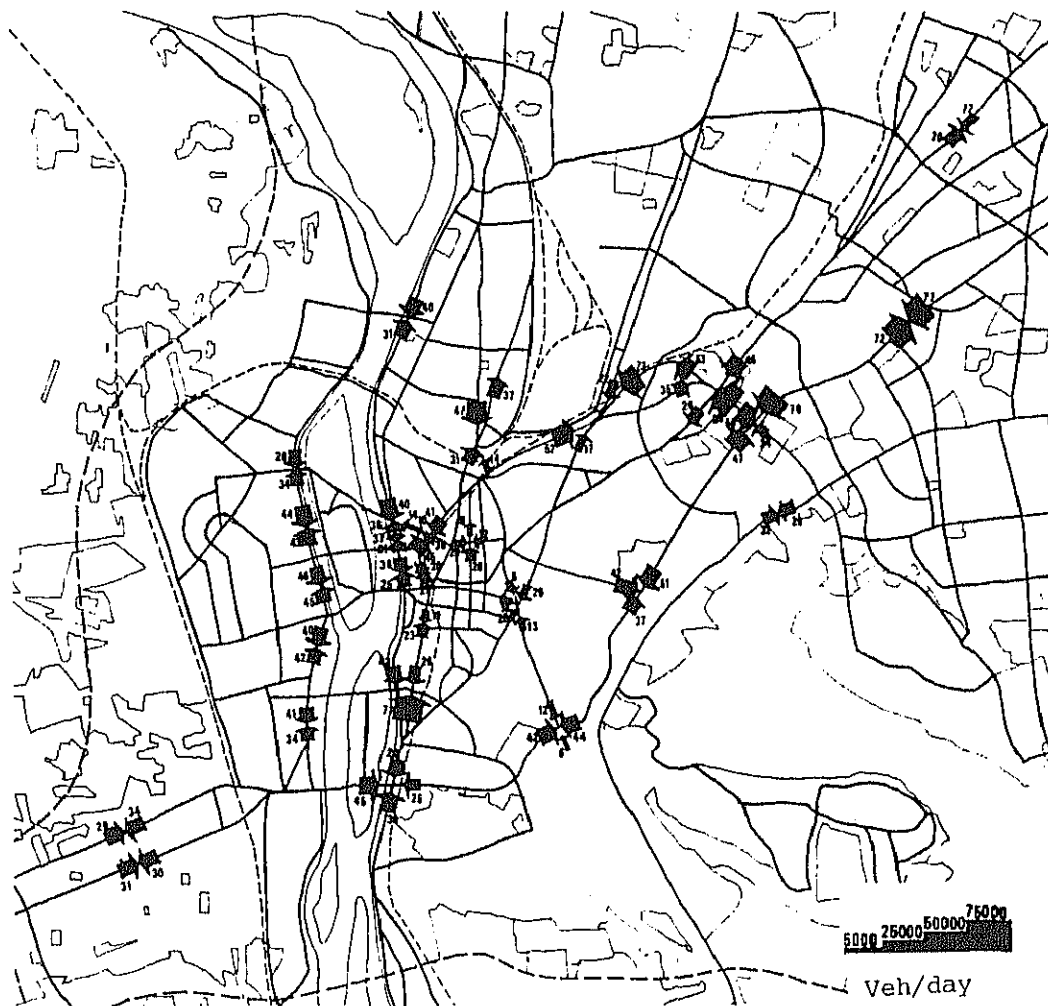


Fig. 3.2.8 Traffic Flow on Major Arterials in the Study Area, 1987

Table 3.2.1 Traffic Flows on Major Roads

(unit: 1000 pcu/day)

Road	Traffic Flow
King Faisal st.	74
Ahram st.	79
Corniche Al Nile st.	90 - 100
Corniche st.	80
Salah Salem st.	90 - 100
Orouba st.	160
Ramses st.	80 - 130
Port Said st.	40 - 50
Shubra st. (one way)	38
26th July st. (in CBD)	40
Emad Al Dine st.	30
Qasr Al Aini st.	50



The peak hour traffic flow diagrams in the three hour period of 8:00 to 11:00 in the morning and 12:00 to 15:00 in the afternoon are given in Fig. 3.2.9. The main traffic loop of Ramses st. - 6th Oct. st. and Salah Salem st. surrounding CBD and its outskirts, and the main radial axes of Khalifah Al Mamoun and Orouba streets connecting to the loop are indicated.

### (2) Hourly Fluctuation

Fig. 3.2.10 shows the hourly fluctuation of traffic flow on the road sections and the intersection entrances. The hourly fluctuation pattern indicates three peaks; the morning peak at 7:00 to 9:00, the midday peak at around 12:00 and the evening peak at 14:00 to 16:00. PHFs on King Faisal and Ahram streets are rather high at 9.7% and 8.7%, and the peak hour is in the evening. At most parts of the streets, PHFs are in the range of 7.0% to 8.0%.

### (3) Vehicle Type Composition

On Ramses st. at Ghamra br., Abbasseya st. at Abbasseya sq. and Shubra st. north of Cairo Central Station, the bus (minibus and normal bus) percentages are 8.7%, 8.7% and 10.0% respectively. The heaviest bus flow of 3,800 buses/d for one direction was observed on Shubra st. (Fig 3.2.11).

The truck percentages are 6.8% and 5.8% on Ramses st. at Ghamra br., and Shubra st. respectively.



(Location Map for Figures 3.2.10 and 3.2.11)



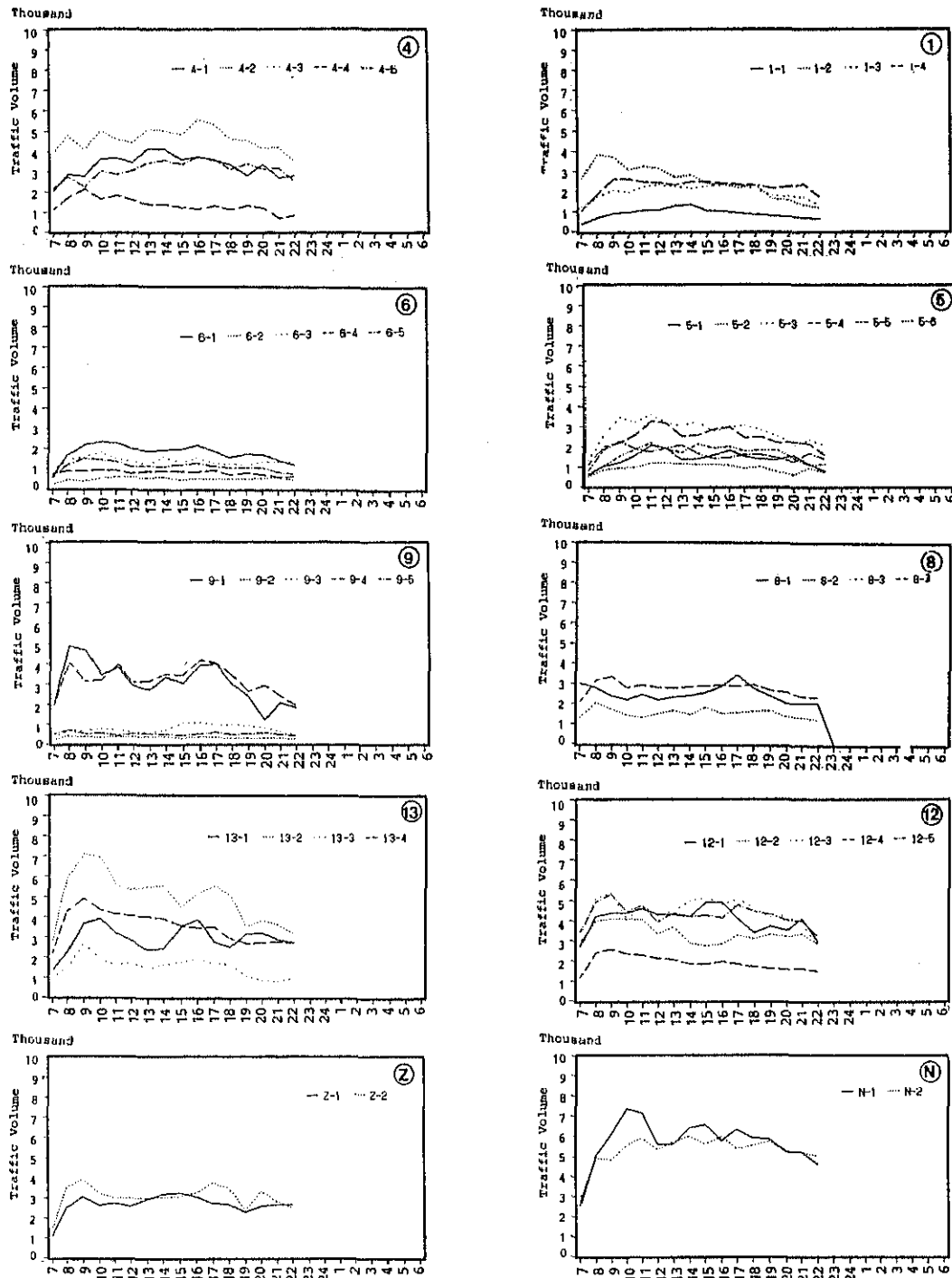


Fig. 3.2.10 Hourly Fluctuation of Traffic on Major Arterials in the Study Area, 1987

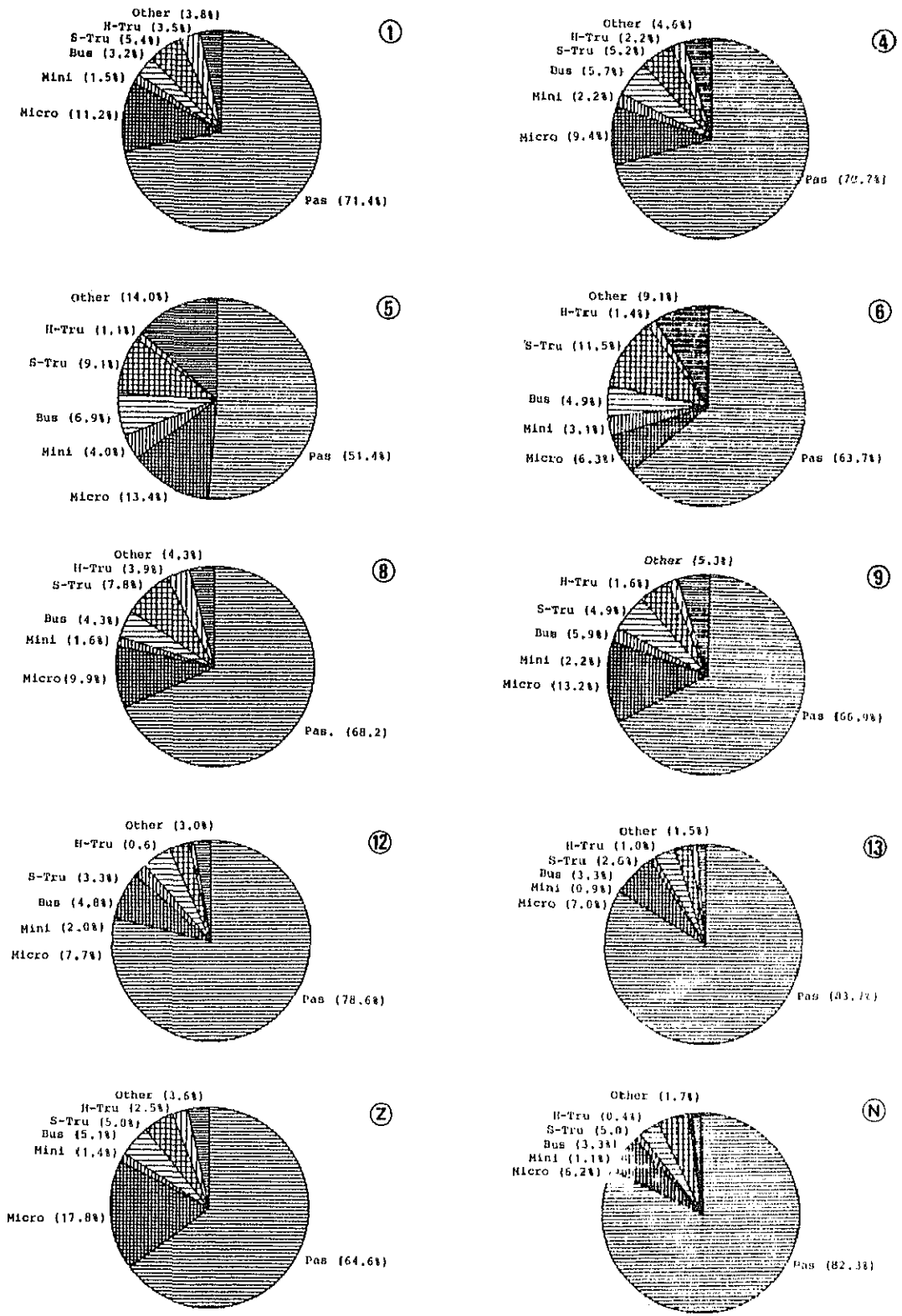


Fig. 3.2.11 Vehicle Type Composition on Major Arterials in the Study Area, 1987

#### 4) Travel Speed

Fig. 3.2.12 shows the travel speed in four periods of early morning, late morning, afternoon and evening, on the three SW-NE corridors of:

6th Oct. - Ramses - Khalifah Al Mamoun streets  
Tahrir - CBD - Gueish streets, and  
Ahram - Salah Salem - Orouba streets

And on three N-S corridors of:

Corniche streets in Giza and Cairo, and  
Port Said st.

On 6th Oct. - Ramses - Khalifah Al Mamoun corridor, speed reductions are observed on the following sections:

- a. Intersection with Corniche st. in Giza to Isaaf sq. in the late morning,
- b. Ramses sq. to the intersection with Ghamra br. throughout the day, especially in the evening,
- c. Abbasseya sq. to the intersection with Sekket Al Wayli st. throughout the day caused by diverging and merging traffic from Kobri Al Kobba area to Khalifah Al Mamoun st.

On Tahrir Corridor,

- a. On the approaching section to Tahrir sq., especially in the late morning and in the afternoon, for both directions,
- b. Around Bab Al Shaaria throughout the day except in the early morning.

On Corniche Corridor in Giza,

- a. On the approaching section to Gamaa br. in the morning for both directions,
- b. On the approaching section to Tahrir br. in the morning for south to north direction,
- c. On the approaching section to Giza br. for both directions.

On Corniche Corridor in Cairo,

On the approaching section to Gamaa br. throughout the day.

On Pyramid st. - Salah Salem st. corridor, speed reduction was observed:

- a. On Giza br. and its approaches throughout the day,
- b. At Al Gehaz Al Markazi intersection, where CTA tram line crosses the road throughout the day.

On the section between Fustat Rd. intersection and Ramses st. intersection, the travel speed of 60 km/h was maintained throughout the day.

Km/h

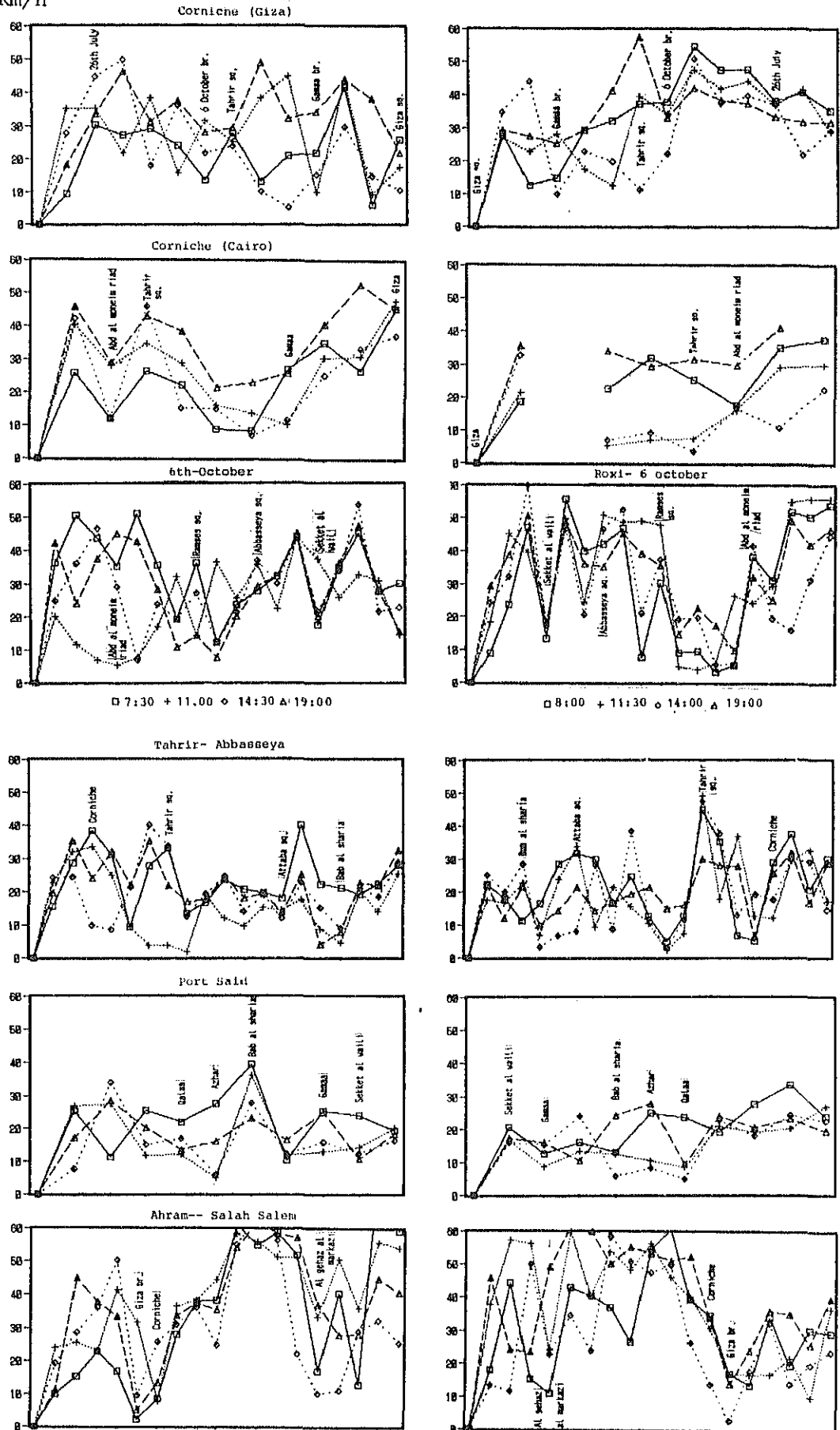


Fig. 3.2.12 Travel Speed on Major Corridors

On Port Said corridor, the travel speed was less than 30 km/h throughout the day, and speed reduction was seen at Bab Al Shaaria intersection with Gueish st.

## 5) Traffic Accident

### (1) Monthly Fluctuation of Traffic Accident

The monthly fluctuations of traffic accidents in the three kisms of Agouza, Masr Al Gadida and Azbakiah are shown in Fig. 3.2.13. The most frequent month when accidents occurred in general was January, which corresponds to 10% of the annual total. The number of accidents for the period of August to December is comparatively low at about 7% except for Agouza.

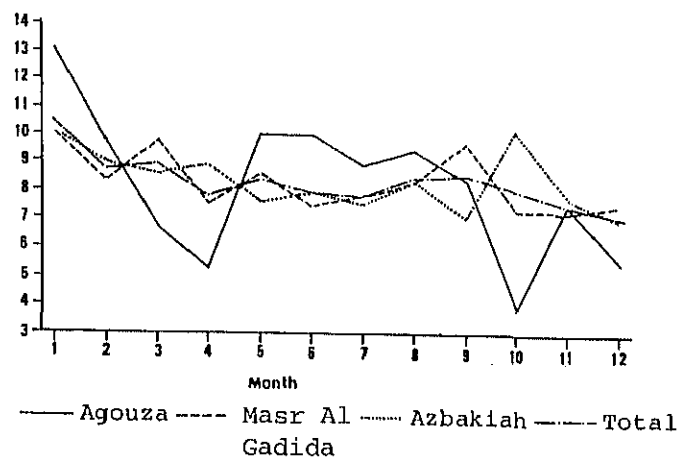


Fig. 3.2.13 Monthly Fluctuation of Traffic Accident in the Selected Kisms

### (2) Traffic Accident by Type of Collision

The percentage of traffic accidents by type of collision is shown in Fig. 3.2.14. The most frequent type of accident was side swipe collision (40%), followed by rear-end collision (35%) and pedestrian accidents (14%).

Fig. 3.2.15 shows the injury and fatality rate per accident by kisms. Both the injury and fatality rates per accident in Masr Al Gadida are the highest among others. The average of the three kisms are 1.21 person per accident for injury and 0.15 person per accidents for fatality.

### (3) Traffic Accident by Vehicle type

The percentage of traffic accidents by vehicle type is shown in Fig. 3.2.16. Private car accidents occupy 70% of the total, followed by buses (20%) and pick-ups (7%).

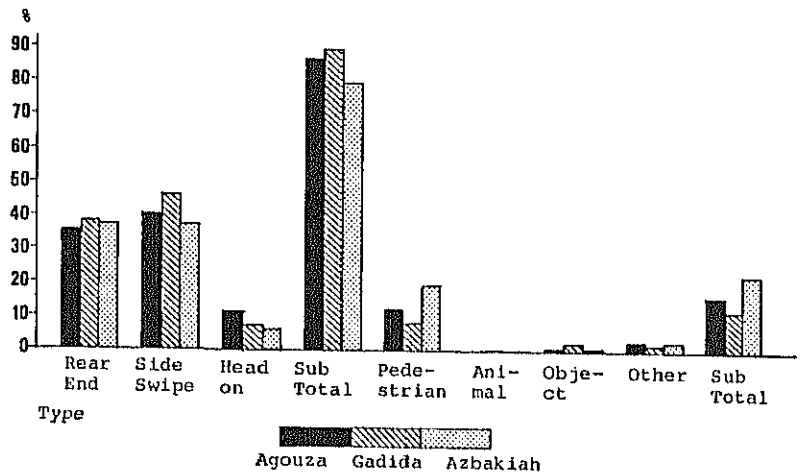


Fig. 3.2.14 Traffic Accident by Collision Type in the Selected Kisms

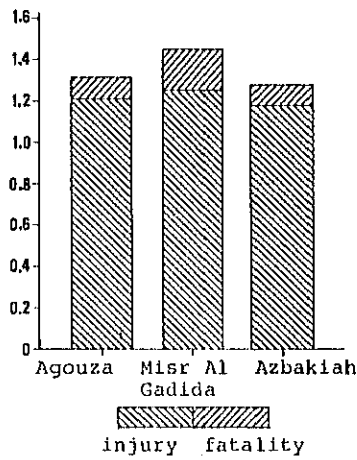


Fig. 3.2.15 Injury and Fatality Rate Per Accident in the Selected Kisms

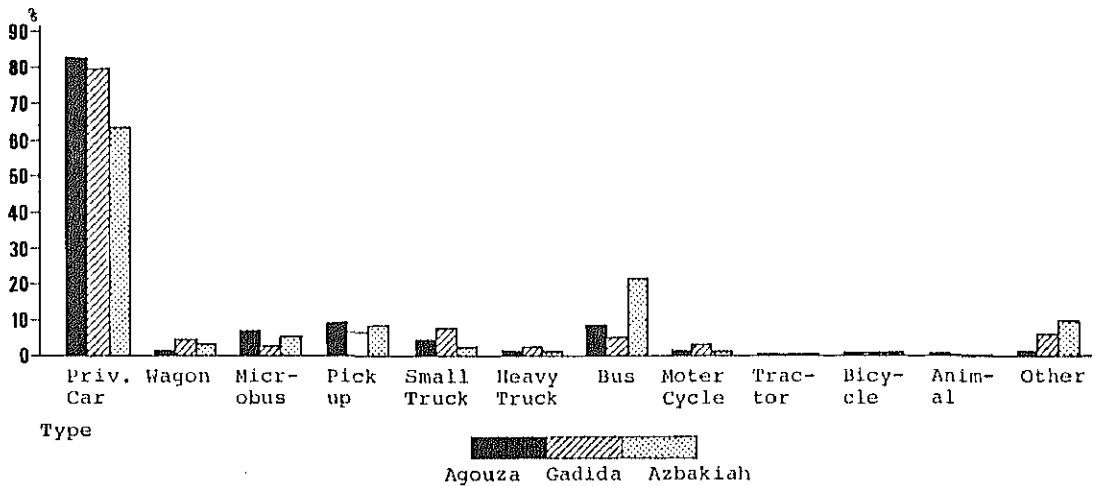


Fig. 3.2.16 Traffic Accident by Vehicle Type in the Selected Kisms



Fig. 3.2.17 shows the share of single accidents and multi accidents by kisms. Only in Agouza, the single accident prevails over the multi accident.

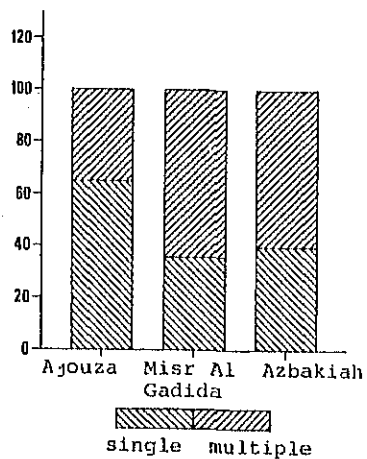


Fig. 3.2.17 Share of Single and Multi-Accident in the Selected Kisms

#### 4. Traffic Condition in CORPS

##### 4.1 Present Transportation Facilities

###### 1) Arterial Road Network in CORPS

Fig. 4.1.1 shows the location of arterials, elevated or depressed roads, and the major squares in CORPS. The north-south arterials are:

Corniche st.  
Qasr Al Aini st. - Marriet st.  
Talaat Harb st. - Shubra st.  
Nobar st. - Sherif st.  
Mohamed Farid st. - Emad Al Dine st.  
Gomhouria st.  
Clot Bey st. - Qalaa st.

and the east-west arterials are:

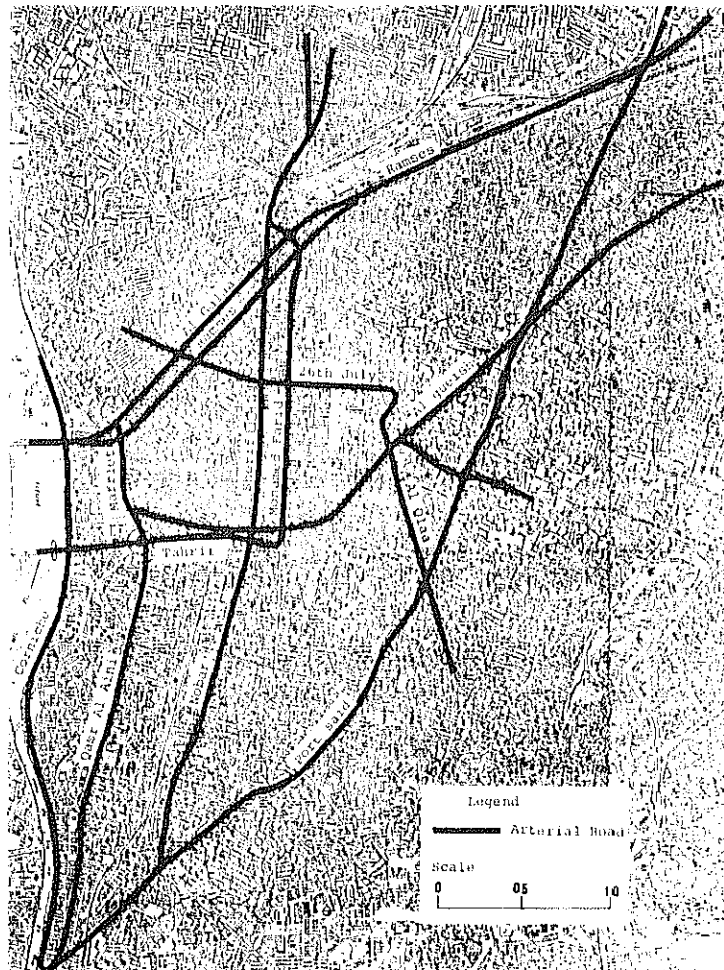


Fig. 4.1.1 Arterial Network in CORPS, 1987

Kamel Sidky st.  
 26th July st.  
 Adly st.  
 Abdel Khaleq Sarwat st. - Azhar st.  
 Qasr Al Nile st.  
 Bassiuni st. - Samuel Burundi st.  
 Boustan st. - Abd Al Aziz st. - Gueish st.  
 Tahrir st.  
 Magles Al Shaab st.

The continuity of the east-west arterials are rather short compared with that of the north-south arterials. The arterials within CORPS except for 26th July, Qasr Al Aini and Marriet streets have similar ROW widths of 16.0 m - 18.0 m. Most of the arterials, except for the arterials surrounding CORPS and 26th July st., are not divided by a central median.

An elevated road, the Azhar flyover penetrates the CBD, with ramps at Opera sq.

## 2) Bus Network in CORPS

Fig. 4.1.2 shows the CTA bus and minibus route network and

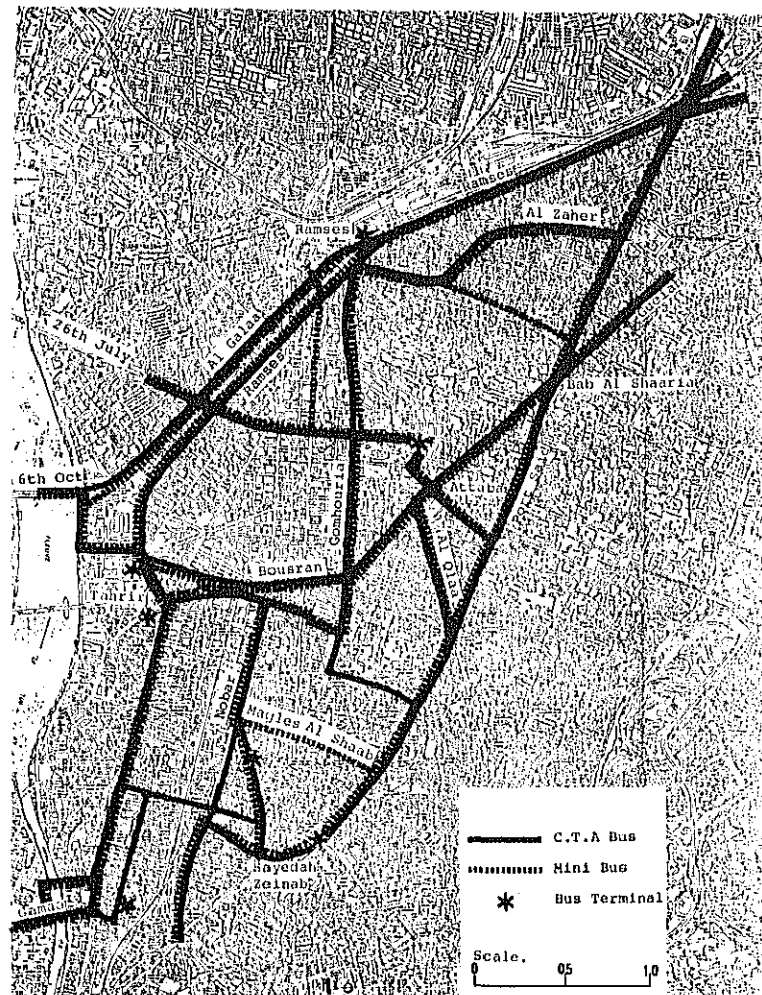


Fig. 4.1.2 Bus Route Network in CORPS, 1987

bus terminal locations in CORPS. Only the Attaba bus terminal is located within CORPS, while the other terminals of Ramses, Tahrir and Sayedah Zeinab are located on the fringe of CORPS.

26th July st. is the major access to Attaba bus terminal. In the section between Tahrir st. and Gamaa br. of Corniche st. all the bus routes with the same direction concentrate on Qasr Al Aini st.

### 3) Railway and Tram Network in CORPS

Fig. 4.1.3 shows the railway and tram networks in CORPS. The Regional Metro Helwan line and Al Marg line are connected by a subway section under Ramses - Marriet streets. Heliopolis Metro line operates along Galaa st. under 6th Oct. br. and terminates just before Tahrir sq. CTA tram lines are operating on:

- Clot Bey st. - Qalaa st.
- Kamel Sidky st.
- Tahrir st. - Boustan st. - Gueish st.
- Nobar st.

Most of the tram routes are competing with either CTA bus or minibus routes.

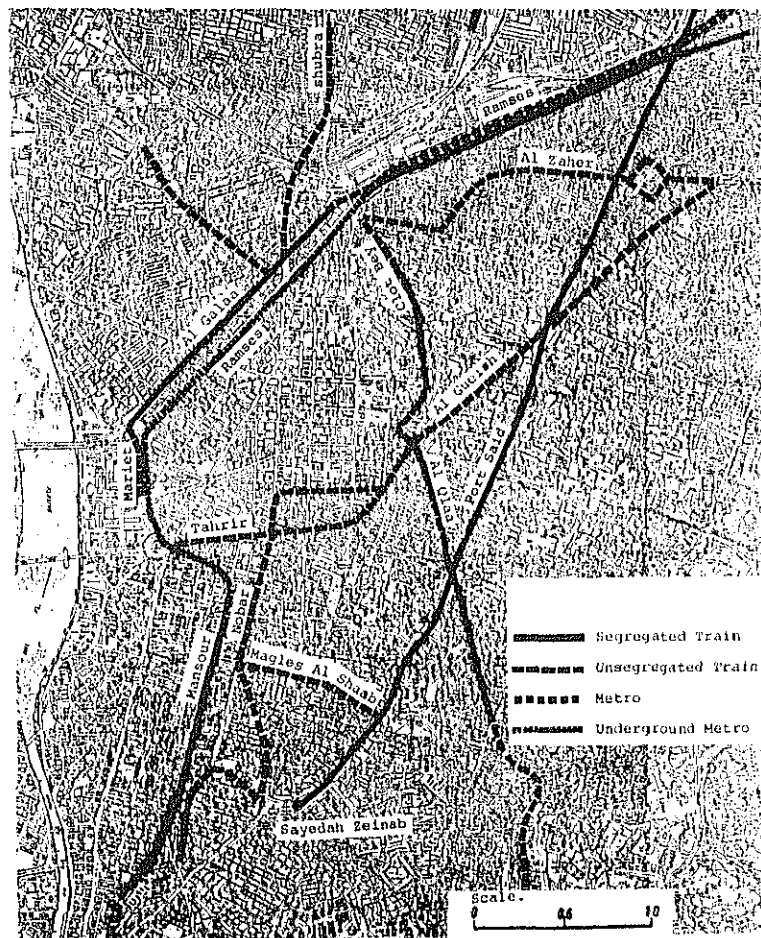


Fig. 4.1.3 Railway and Tram Line Network in CORPS, 1987

## 4.2 Present Traffic Flow in CORPS

### 1) Characteristics of Trips attracted to CORPS

According to the PT survey results, 6.9% of the total daily trips in GCMR concentrate to CORPS. The zones where CORPS bound trips are heavily generated are zone 29 (Sayedah Zeinab), zone 41 (Boulak Al Dakrour), zone 31 (Masr Al Qadima) and zone 17 (Al Wayli).

The prevailing modes used by these attracted trips are the CTA bus (28.1%), followed by Private Car (26.4%) and Walk (12.1%). Approx. 40% of the private car trips generate from Heliopolis area (zones 7, 8 and 9) and Giza north area (zones 38 and 39). CTA bus trips generate from Shubra area (zones 11, 12, 15 and 16), south of CORPS (zones 30, 31 and 32) and Boulak Al Dakrour (zone 41).

45.2% of the total trips concentrate to CORPS with the purpose of "Work", 21.7%; "Home"; 12.9%; "School", and 5.9%; "Shopping". 17% of the "Home" trips come from Heliopolis (zone 17).

### 2) Vehicle Traffic Flow in CORPS

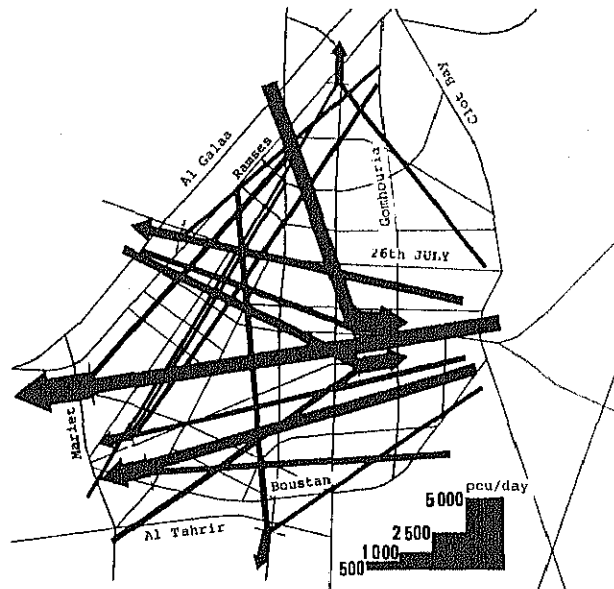
According to the PT survey results, at present 111,500 vehicles concentrate to CORPS daily.

Through traffic in CBD on average accounts for 14% of traffic during the morning peak hours, according to the traffic counting in Second Urban Development Project, CBD Components, 1985, as shown in Fig. 4.2.1. The ratio is particularly high on Abdel Khaleq Sarwat st. (24%), Boustan st. (19%), Mahmoud Bassiuni st. (19%), and Qasr Al Nile st. (15%). Most through traffic travels from east to west (between Attaba sq. and Tahrir sq. or Marriet st.).

The average travel speed within CORPS for the whole day is 11.9 km/h. Exceptional speed reduction of less than 10 km/h is observed at:

- a. Approaches to Attaba sq. at 14:00 - 18:30
- b. Approach to 26th July st. on Clot Bey st. throughout the day
- c. Intersection with approach to Gamaa br. on Qasr Al Aini st. at 11:00 - 14:00
- d. Intersection with 26th July st. on Galaa and Ramses streets throughout the day

These speed reductions were mainly caused by the conflict of two heavy traffic flows, and bus and passenger movements at bus terminals and stops.



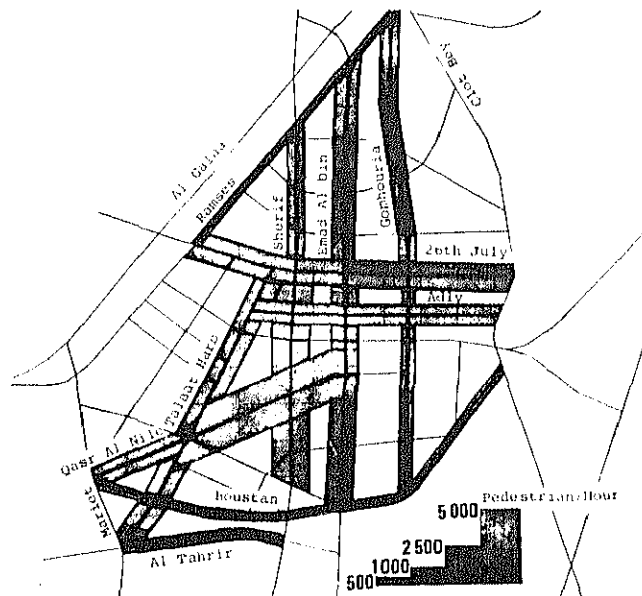
Source: Second Urban Development Project, 1985

Fig. 4.2.1 Through Traffic Flow in CBD, 1985

### 3) Pedestrian Flow in CORPS

The flow of pedestrian traffic in CBD is illustrated in Fig. 4.2.2. At present, large pedestrian traffic is seen on Qasr Al Nile st. (6,800 person/hour), Sherif st. (5,600 person/hour), Talaat Harb st. (3,700 person/hour), 26th July st. (3,800 person/hour), and Emad Al Dine st. (3,400 person/hour).

These large flows connect the major inter-modal transfer nodes of Ramses sq., Tahrir sq. and Attaba sq.



Source: Second Urban Development Project, 1985

Fig. 4.2.2 Pedestrian Traffic Flow in CBD, 1985

#### 4.3 Present Car Parking Condition in CORPS

##### 1) Parking Capacity

##### (1) Curb Parking

Generally curb parking is not restricted in GCMR, however in CORPS, curb parking is restricted on many streets. Fig. 4.3.1 shows the streets where curb parking is restricted in CORPS. There is no toll system for the curb parking.



Fig. 4.3.1 Curb Parking Restriction in Corps, 1987

Fig. 4.3.2 shows the restriction rate (rate of restricted curb length to the entire street length) in CORPS by sub-divided zones. The restriction rate is 34% in average. Zones having higher restriction rates are seen along Ramses st. and around Azbakiah garden, and zones with lower rates are concentrated in the southern part of CORPS, where relatively low density residential and institutional areas are spread.

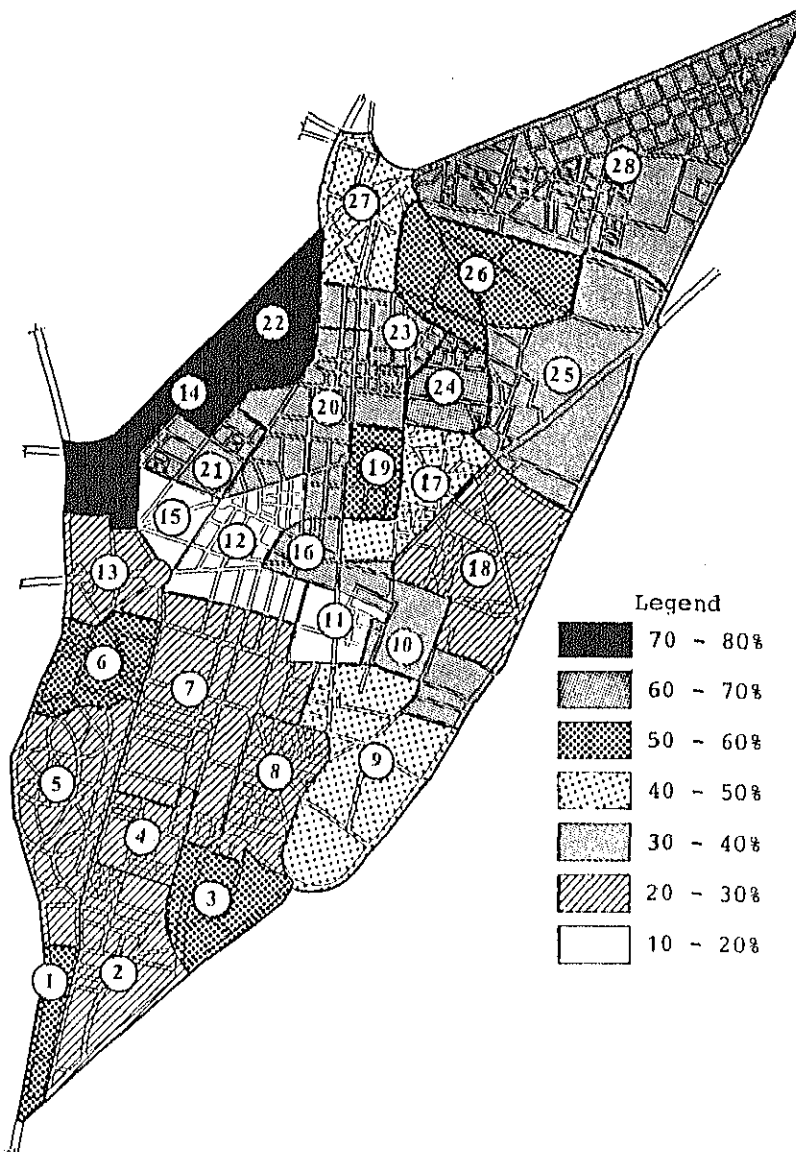


Fig. 4.3.2 Curb Parking Restriction Rate in Corps, 1987

On-street parking capacity by sub-divided zone in CORPS is shown in Table 4.3.1. The total legally allowed on-street parking capacity is calculated at about 25,800 pcu spaces, and when the illegal, but practically allowed curb parking is added to the parking capacity, the total on-street capacity will increase by about 1.5 times or 39,400 pcu spaces.



Table 4.3.1 Parking Capacity in CORPS, 1987

(unit: pcu)

Zone No.	On-Street			Off-Street			Total
	Legal	Illegal	Sub-total	Public	Private	Sub-total	
1	232	298	530	0	170	170	700
2	1510	402	1912	472	78	550	2462
3	413	488	901	322	8	330	1231
4	853	313	1166	333	108	441	1607
5	1952	522	2474	1109	415	1524	3998
6	502	545	1047	179	340	519	1566
7	2245	743	2988	615	862	1477	4465
8	1234	312	1546	191	16	207	1753
9	955	751	1706	315	0	315	2021
10	581	371	952	212	50	262	1214
11	519	65	584	124	185	309	893
12	1407	308	1715	708	149	857	2572
13	490	180	670	715	173	888	1558
14	270	676	946	2082	96	2178	3124
15	350	85	435	204	56	260	695
16	400	158	558	155	28	183	741
17	558	519	1077	1390	20	1410	2487
18	1615	452	2067	154	77	231	2298
19	231	307	538	297	62	359	897
20	1352	768	2120	1394	48	1442	3562
21	537	273	810	573	370	943	1753
22	100	272	372	589	29	618	990
23	590	338	928	399	15	414	1342
24	196	390	586	688	15	703	1289
25	1291	685	1976	143	10	153	2129
26	549	684	1233	233	0	233	1466
27	538	573	1156	359	105	464	1620
28	4313	2063	6373	1078	130	1208	7581
Total	25783	13541	39366	15033	3615	18648	58014

Note: Parking density (%) =  $\frac{\text{Actual parking demand (PCU)}}{\text{Legal parking capacity (PCU)}}$

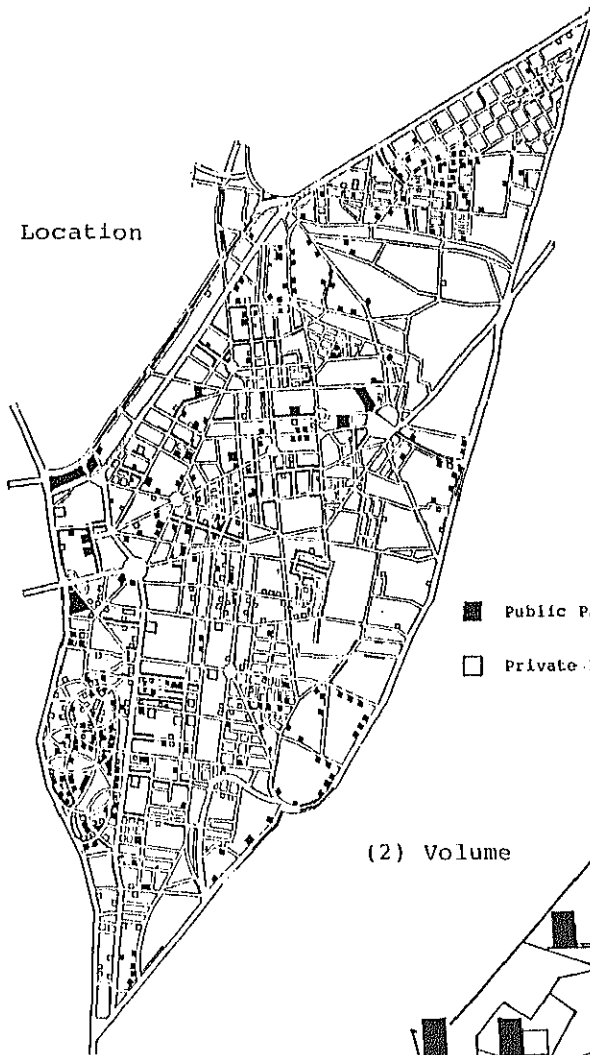
## (2) Off-Street Parking Facilities

Fig. 4.3.3 shows the distribution of currently existing off-street parking lots for public use in CORPS. The exclusive parking space for specified drivers are excluded. There are about 18,700 off-street parking lots, 80% of which are public and 20% private. Although about 75% of the total are located in CBD, the present level of off-street parking capacity is far from sufficient to meet the parking demand.

The major off-street hourly charged parking spaces and their charges are shown in Table 4.3.2. Out of a total of 15,000 public parking lots, 50% are toll free. Out of the remaining 50% toll parking lots, 24% are charged by the month, and 26% or 38,000 lots by the hour. The average monthly parking fare is approx. 15 LE/month.

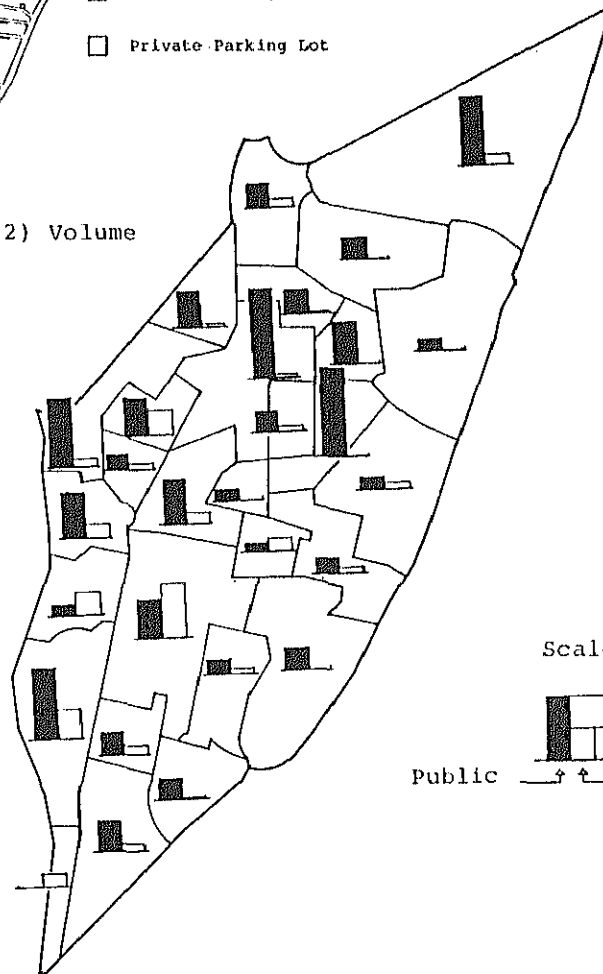
Out of the total parking capacity of 58,000 in CORPS including illegal on-street parking lots, the share of off-street parking is only 30%.

(1) Location



■ Public Parking Lot  
□ Private Parking Lot

(2) Volume



Scale  
1000  
500  
Public ↑ Private

Fig. 4.3.3 Location of Off-Street Parking in CORPS, 1987

Table 4.3.2 Parking Fare of Toll Parking

Location	Owned by	Type	LE/H
Opera Sq.	Public	Building	0.25
Attaba Sq.	Public	Building	0.25
Abdel Moneim Riad	Public	Open Air	0.10
Ramses Hilton Hotel	Private	Building	0.50
Semiramis Hotel	Private	Building	1.00
Nile Hilton Hotel	Private	Open Air	0.35

2) Parking Demand Structure

(1) Parking Demand in CORPS

Table 4.3.3 shows the number of parked vehicles on streets in CORPS by hour. The maximum hourly parking demand is about 33,000 pcu at 12:00 - 13:00, which corresponds to almost 1/3rd of the total attracted vehicles to CORPS in a day. The highest parking demand was observed at the sub-divided zone 28, where small scale commercial and the residential buildings are mixed, followed by sub-divided zone 7, where the institutions are concentrated, and sub-divided zone 12, where the business offices are concentrated.

Table 4.3.3 On-Street Parking Demand in CBD, 1987

ZONE NO	Time																AV		MAX
	6:00-7:00	7:00-8:00	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00				
1	81	73	140	200	237	223	221	194	152	119	105	96	72	58	56	56	130	237	
2	918	933	908	960	1,096	1,106	1,122	1,091	1,008	1,005	1,004	994	989	951	926	873	993	1,122	
3	516	492	444	462	522	504	518	568	479	529	516	446	471	526	563	554	507	568	
4	444	397	413	455	511	589	603	533	443	367	430	418	406	422	471	473	462	603	
5	1,465	1,526	1,967	2,347	2,401	2,317	2,397	2,274	2,083	1,835	1,479	1,329	1,258	1,397	1,395	1,388	1,804	2,401	
6	448	522	806	929	980	983	973	912	885	718	533	392	369	390	393	430	666	983	
7	1,443	1,505	1,949	2,515	2,692	2,822	2,885	2,675	2,316	1,959	1,782	1,773	1,861	1,771	1,775	1,657	2,086	2,885	
8	1,050	1,088	1,150	1,044	1,153	1,161	1,160	1,162	1,124	1,157	1,141	1,126	1,127	1,144	1,109	1,127	1,126	1,162	
9	857	847	806	779	884	972	1,010	1,013	996	1,027	1,075	1,039	1,191	1,048	1,058	1,063	979	1,191	
10	369	398	390	507	571	564	569	550	477	434	420	442	469	482	447	399	468	571	
11	523	502	536	599	625	636	630	668	672	595	598	605	595	635	609	540	598	672	
12	1,156	1,444	2,311	2,566	2,722	2,755	2,854	2,854	2,302	2,291	1,578	1,519	1,582	1,801	1,748	1,663	2,078	2,854	
13	129	190	464	658	857	980	982	980	873	717	525	301	282	296	326	344	557	982	
14	166	243	579	971	1,037	1,168	1,195	1,135	943	575	432	384	416	372	318	309	640	1,195	
15	187	240	343	393	396	409	427	421	418	363	318	298	310	333	316	286	341	427	
16	331	324	481	565	600	611	711	721	606	517	509	532	564	644	691	444	553	721	
17	399	415	520	720	812	835	875	799	762	695	612	591	631	665	572	614	657	875	
18	1,326	1,254	1,347	1,610	1,885	1,952	2,009	2,091	1,950	1,911	1,845	1,864	1,859	1,820	1,636	1,485	1,735	2,009	
19	199	257	508	581	561	578	569	636	603	499	352	335	346	376	362	305	442	636	
20	761	1,126	1,754	1,993	2,109	2,160	2,153	2,157	1,872	1,774	1,543	1,567	1,658	1,747	1,636	1,200	1,706	2,160	
21	550	560	651	735	825	824	878	845	818	728	649	622	691	692	643	621	708	878	
22	111	136	235	496	555	605	674	642	620	482	440	472	517	487	435	431	459	674	
23	379	380	813	989	986	1,111	1,062	1,004	988	820	667	626	643	639	578	512	762	1,111	
24	161	158	199	267	363	377	392	410	328	284	260	250	261	226	279	221	277	410	
25	657	684	785	999	1,130	1,245	1,253	1,235	1,272	1,264	1,277	1,236	1,284	1,191	1,121	1,088	1,108	1,284	
26	532	536	494	659	723	773	792	777	537	559	537	547	562	547	510	541	602	792	
27	432	519	640	833	948	1,007	1,012	1,003	914	760	701	653	650	620	627	573	743	1,012	
28	3,559	3,424	3,241	3,341	3,436	3,494	3,509	3,646	3,759	3,885	3,954	3,893	3,933	3,886	3,592	3,506	3,629	3,954	
Total	19,149	20,173	24,863	29,193	31,617	32,761	33,435	32,906	30,198	27,889	25,293	24,350	25,107	25,166	24,192	22,783	26,817	33,435	

(2) Parking Density

Table 4.3.4 shows the ratio of on-street parking demand to legally allowed on-street parking capacity (referred to as parking density).

The CBD bordered by Corniche, Ramses, Clot Bey, Azhar, Port Said, and Aly Ibrahim streets, has a high parking density, especially in the sub-divided zones 14, 19 and 22, where the parking

Table 4.3.4 Parking Density on Street by Zone

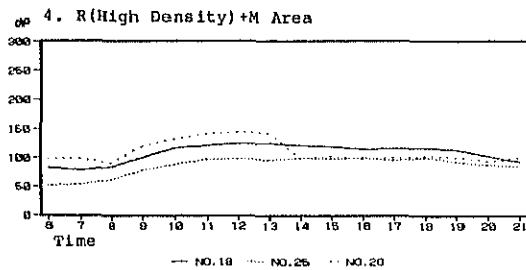
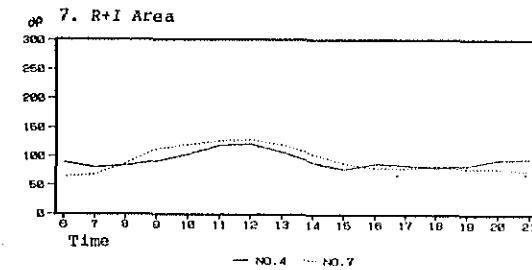
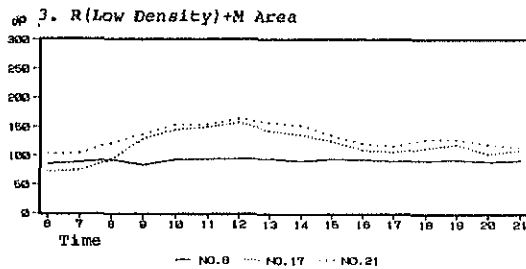
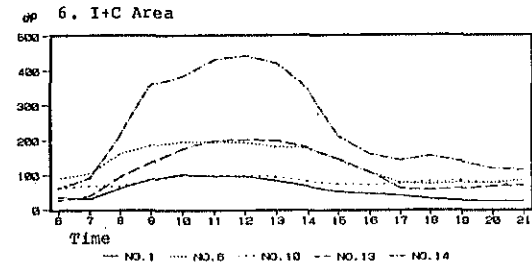
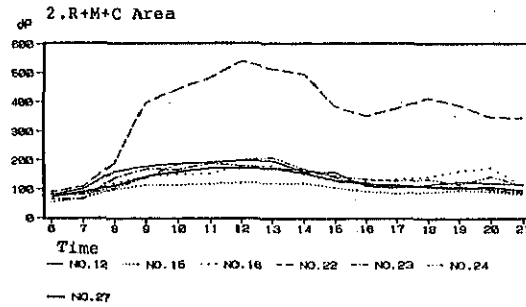
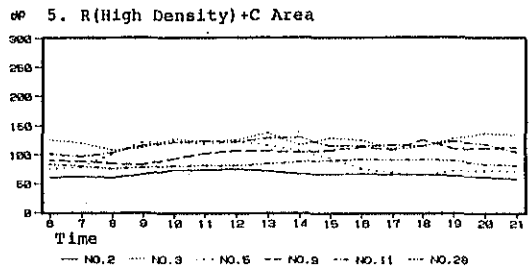
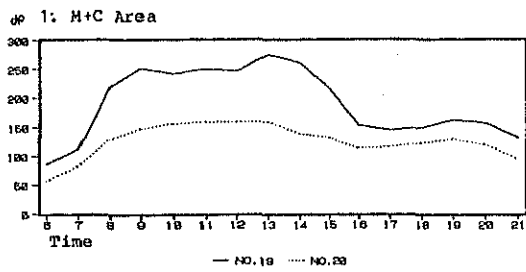
Zone No.	Time															
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	35	31	60	86	102	96	95	84	66	51	46	41	31	25	24	24
2	61	62	60	65	73	73	74	72	66	67	66	66	65	63	61	58
3	125	119	108	112	126	122	125	138	116	128	125	108	114	127	136	134
4	89	80	83	91	102	118	121	107	89	78	86	84	81	85	94	95
5	75	78	101	120	123	119	123	116	107	94	76	68	64	72	71	71
6	89	104	161	185	195	196	194	182	176	143	106	78	74	78	78	86
7	64	67	87	112	120	126	129	119	103	87	79	79	83	79	79	74
8	85	88	93	85	93	94	94	94	91	94	92	91	91	93	90	91
9	90	89	84	82	93	102	106	106	104	108	113	109	125	110	111	111
10	64	69	67	87	98	97	98	95	82	75	72	76	81	83	77	69
11	101	97	103	115	120	123	121	129	129	115	115	117	115	122	117	104
12	80	100	160	177	188	190	197	197	159	158	109	105	116	124	121	115
13	26	39	95	134	175	200	200	200	178	146	109	61	58	60	67	70
14	61	90	214	360	384	433	443	420	349	213	160	142	154	138	118	114
15	53	69	98	112	113	117	122	120	119	104	91	85	89	95	90	82
16	83	81	120	141	150	153	178	180	152	129	127	133	141	161	173	111
17	72	74	93	129	146	150	157	143	137	125	110	106	113	119	103	110
18	82	78	83	100	117	121	124	124	121	118	114	115	116	113	101	92
19	86	111	220	252	243	250	246	275	261	216	152	145	150	163	157	132
20	56	83	130	147	156	160	159	160	138	131	114	116	123	129	121	95
21	102	104	121	137	154	153	164	157	152	136	121	116	129	129	120	116
22	89	109	188	397	444	484	539	514	496	386	352	378	414	390	348	345
23	64	64	138	168	167	188	180	170	167	139	113	106	109	108	98	87
24	82	81	102	136	185	192	200	209	167	145	133	128	133	115	142	113
25	51	53	61	77	88	96	97	96	99	98	99	96	99	92	87	84
26	97	98	90	120	132	141	144	142	98	102	98	100	102	100	93	99
27	74	89	110	143	163	173	174	172	157	130	120	112	111	106	108	98
28	83	79	75	77	80	81	81	85	87	90	92	90	91	90	83	81
Total	75	79	97	114	124	128	131	129	118	109	99	95	98	99	95	89

Note: Parking density (%) =  $\frac{\text{Actual parking demand (PCU)}}{\text{Legal parking capacity (PCU)}}$

density in the business hour exceeds 200%. In the sub-divided zones 6, 12, 13, 15, 16, 20, 21, 23, 24 and 27, the parking density is in the range of 150% to 200%.

The hourly fluctuations of parking density in CORPS by the typical land use are shown in Fig. 4.3.4. The characteristics of the hourly fluctuation of parking density are:

- 8:00 Sub-divided zones 3, 5, 6, 11, 12, 14, 16, 19, 20, 21, 22, 23, 24 and 27 show high parking densities which exceed 100%.
- 11:00 Parking densities in the sub divided zones 4, 7, 9, 15, 17, 18 and 26 increase to about 100%. In the sub-divided zones 13, 16, 20, 21, 23, 24 and 27, the densities exceed 150%.
- 14:00 The parking density distribution pattern is similar to that in 11:00. Parking densities in the sub-divided zones 4, 20 and 26 decrease.
- 19:00 Parking densities in the sub-divided zones 5, 6, 7, 12, 13, 14, 19, 21, 23, 24 and 27 decrease, while parking density in the sub-divided zone 5 increases to more than 150%.



M : Mixed Residential / Commercial  
 C : Commercial  
 R : Residential  
 I : Institution / Government

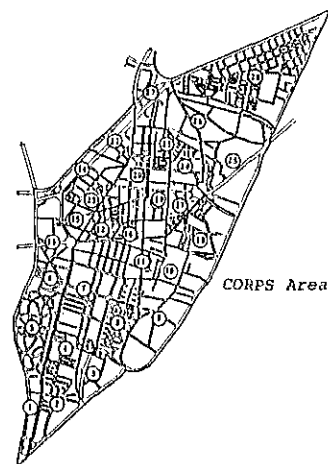


Fig. 4.3.4 On-Street Parking Density by Hour in CORPS, 1987

### (3) Parking Demand by Purpose

Fig. 4.3.5 shows the parking demand by purpose in the PT zones 23 (Azbakiah), 24 (Moski), 25 (Abdin) and 28 (Qasr Al Nile). "Work" purpose occupied almost 60% of the total demand, followed by "School" (7.6%) and "Home" (13.3%).

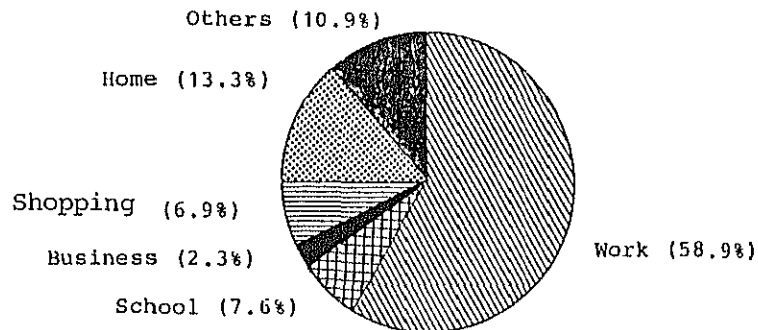


Fig. 4.3.5 Parking Demand Composition by Purpose in PT Zones 23, 24, 25 and 28

### (4) Entering and Leaving Time

Fig. 4.3.6 shows the number of vehicles entering to and leaving from on-street parking lots in CORPS by hours. The entering peak hours are 6:00 - 7:00 in the morning and 12:00 - 15:00 in the afternoon. The leaving peak hours are 13:00 - 14:00 in the afternoon and 21:00 - 22:00 in the evening. The leaving peak hour in the institutional area is 8:00 in the morning and that in the commercial area is 17:00 - 18:00 in the evening. The mid-day entering peak and leaving peak coincide in the various land use area.

### (5) Parking Duration

The accumulated curves of on-street parking duration by typical land use in CORPS are shown in Fig. 4.3.7. The average parking duration in the entire area is about 218 min. The parking duration in the area where mainly commercial and business activities are located is shorter than in the other areas, ranging between 160 min. and 190 min. The parking duration in residential area is in the range between 220 min. and 300 min.

37% of total cars parked on streets, parked for less than one hour; 18% for 1 - 2 hours; 8% for 2 - 3 hours; and 37% parked for more than 3 hours.

The longest parking duration, more than 8 hours, in terms of 80% accumulated duration was seen in the high density residential area, while the 80% parking duration in the commercial area was 4.5 - 5 hours.

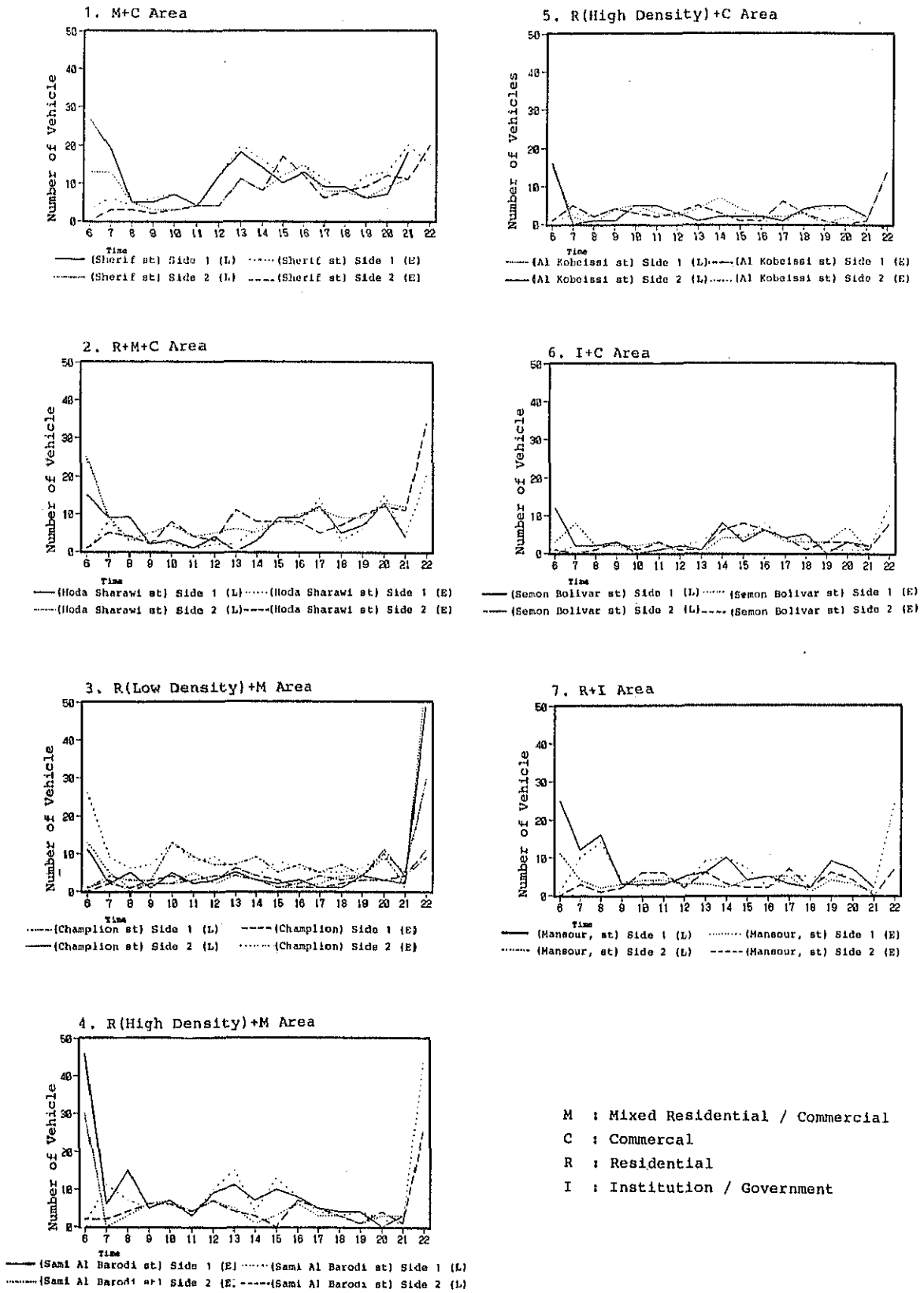
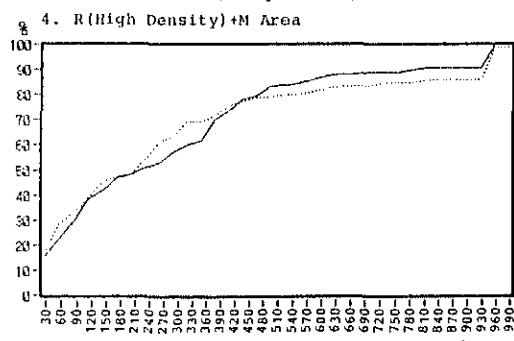
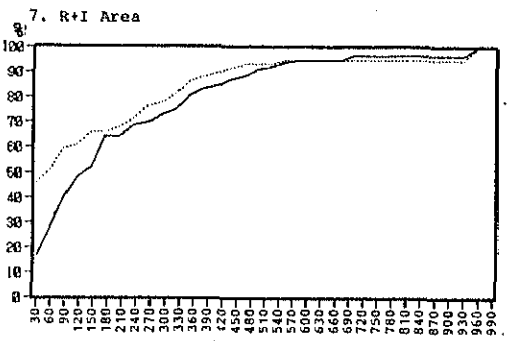
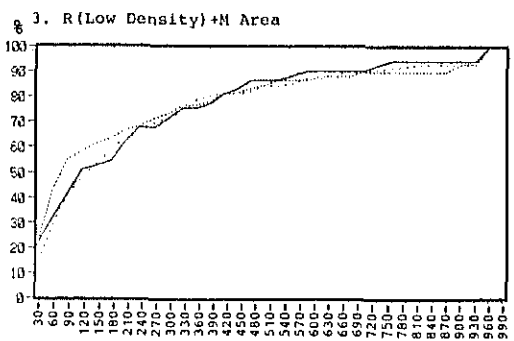
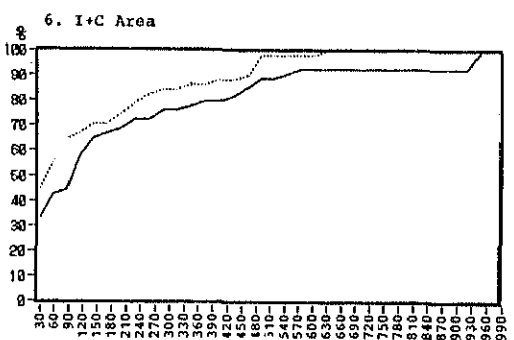
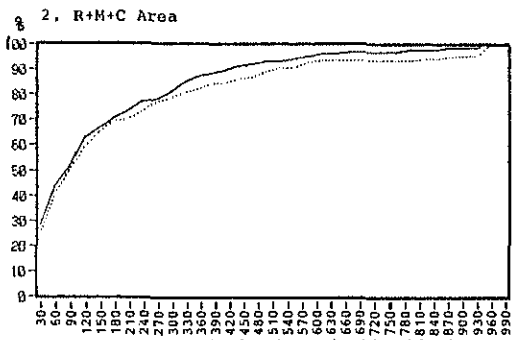
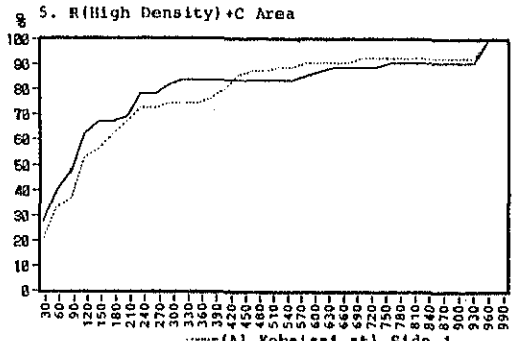
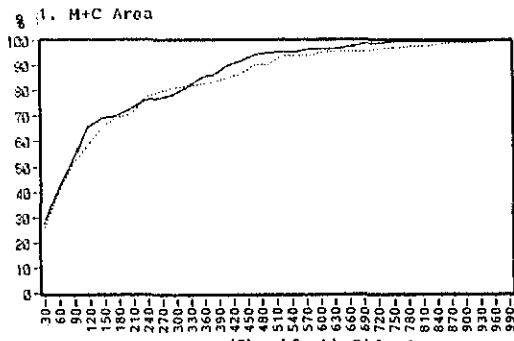


Fig. 4.3.6 Entering and Leaving Parking Demand in CORPS, 1987



M : Mixed Residential / Commercial  
 C : Commercial  
 R : Residential  
 I : Institution / Government

Fig. 4.3.7 Cumulative Parking Duration Distribution in CORPS, 1987



## (6) Turn-over Rate

Table 4.3.5 shows the turn-over rate of on-street parking lots in a day in selected areas within CORPS. The entire average was 4.1 times. Area 1, where commercial activities are located, has a higher rate of 5.4 times, and the rate in residential area was in the range of 3.2 - 3.8 times.

Table 4.3.5 Parking Situation by Typical Land Use

Typical Land Use & Link No.	Parking Demand (PCU)	Capacity (PCU)	Ave. P. Turnover Rate	Ave. P. Duration (Min)	Duration (%)													
					Less than 0.5H	Less than 1.0H	Less than 1.5H	Less than 2.0H	Less than 2.5H	Less than 3.0H	Less than 3.5H	Less than 4.0H	Less than 4.5H	Less than 5.0H				
<b>1.M+C</b>																		
Sherif st. (1)	183	32	5.7	155	27	42	53	66	69	70	73	77	77	79				
Sherif st. (2)	133	26	5.1	172	25	40	51	58	66	69	71	78	80	81				
<b>Total</b>	<b>316</b>	<b>58</b>	<b>5.4</b>	<b>163</b>	<b>26</b>	<b>41</b>	<b>52</b>	<b>62</b>	<b>68</b>	<b>70</b>	<b>72</b>	<b>77</b>	<b>78</b>	<b>80</b>				
<b>2.R+M+C</b>																		
Hoda Shaarawi st. (1)	105	23	4.6	186	29	44	51	63	67	70	73	77	78	81				
Hoda Shaarawi st. (2)	141	34	4.1	190	25	40	50	59	65	70	70	73	77	79				
<b>Total</b>	<b>246</b>	<b>57</b>	<b>4.3</b>	<b>188</b>	<b>27</b>	<b>42</b>	<b>50</b>	<b>61</b>	<b>66</b>	<b>70</b>	<b>72</b>	<b>75</b>	<b>78</b>	<b>80</b>				
<b>3.R(C,D)+M</b>																		
Champolion st. (2)	53	14	3.8	233	23	32	42	51	53	55	62	68	68	72				
Champolion st. (2)	60	15	4.0	227	23	43	55	58	62	63	67	68	72	73				
Champolion st. (1)	129	34	3.8	243	15	29	41	48	53	59	64	66	70	72				
<b>Total</b>	<b>242</b>	<b>63</b>	<b>3.8</b>	<b>237</b>	<b>20</b>	<b>36</b>	<b>48</b>	<b>54</b>	<b>56</b>	<b>61</b>	<b>65</b>	<b>67</b>	<b>71</b>	<b>73</b>				
<b>4.R(H,D)+A</b>																		
Sami Al Barroudi st. (1)	143	46	3.1	301	15	22	29	38	42	47	48	51	53	57				
Sami Al Barroudi st. (2)	85	26	3.3	295	16	28	33	39	46	47	48	54	61	64				
<b>Total</b>	<b>228</b>	<b>72</b>	<b>3.2</b>	<b>299</b>	<b>15</b>	<b>25</b>	<b>32</b>	<b>38</b>	<b>44</b>	<b>47</b>	<b>48</b>	<b>53</b>	<b>56</b>	<b>60</b>				
<b>5.R(H,D)+C</b>																		
Al Kobelssi st. (1)	55	16	3.4	210	27	40	47	62	67	67	69	78	78	82				
Al Kobelssi st. (2)	55	16	3.4	225	20	33	36	53	56	62	67	73	73	75				
<b>Total</b>	<b>110</b>	<b>32</b>	<b>3.4</b>	<b>218</b>	<b>25</b>	<b>35</b>	<b>43</b>	<b>55</b>	<b>61</b>	<b>64</b>	<b>68</b>	<b>76</b>	<b>76</b>	<b>78</b>				
<b>6.I+C</b>																		
Simon Bolivar st. (1)	54	15	3.6	209	33	43	44	57	65	65	69	72	72	76				
Simon Bolivar st. (2)	51	11	4.6	130	45	55	65	67	71	71	75	78	82	84				
<b>Total</b>	<b>105</b>	<b>26</b>	<b>4.0</b>	<b>176</b>	<b>40</b>	<b>47</b>	<b>55</b>	<b>63</b>	<b>68</b>	<b>68</b>	<b>72</b>	<b>75</b>	<b>78</b>	<b>80</b>				
<b>7.R+I</b>																		
Mansour st. (1)	115	28	4.1	208	17	28	40	48	52	64	64	69	70	73				
Mansour st. (2)	59	14	4.2	164	46	51	59	61	66	66	68	71	76	78				
<b>Total</b>	<b>174</b>	<b>42</b>	<b>4.1</b>	<b>194</b>	<b>32</b>	<b>42</b>	<b>48</b>	<b>54</b>	<b>60</b>	<b>65</b>	<b>67</b>	<b>70</b>	<b>73</b>	<b>75</b>				
<b>TOTAL</b>	<b>1421</b>	<b>350</b>	<b>4.1</b>	<b>218</b>	<b>24</b>	<b>37</b>	<b>46</b>	<b>55</b>	<b>60</b>	<b>63</b>	<b>66</b>	<b>70</b>	<b>72</b>	<b>75</b>				

Note M : Mixed Residential/Commercial  
 C : Commercial  
 R : Residential  
 I : Institution/Government  
 ( ) : Side Number

#### 4.4 Traffic Regulations

##### 1) One-way Regulation

Fig. 4.4.1 shows the present one-way regulations in CORPS. Almost all the arterials in CORPS are regulated to be one way except for such few arterials as:

Port Said st.  
Qasr Al Aini st.  
Gomhouria st.

26th July st.  
Gueish st.  
Kamel Sidky st.

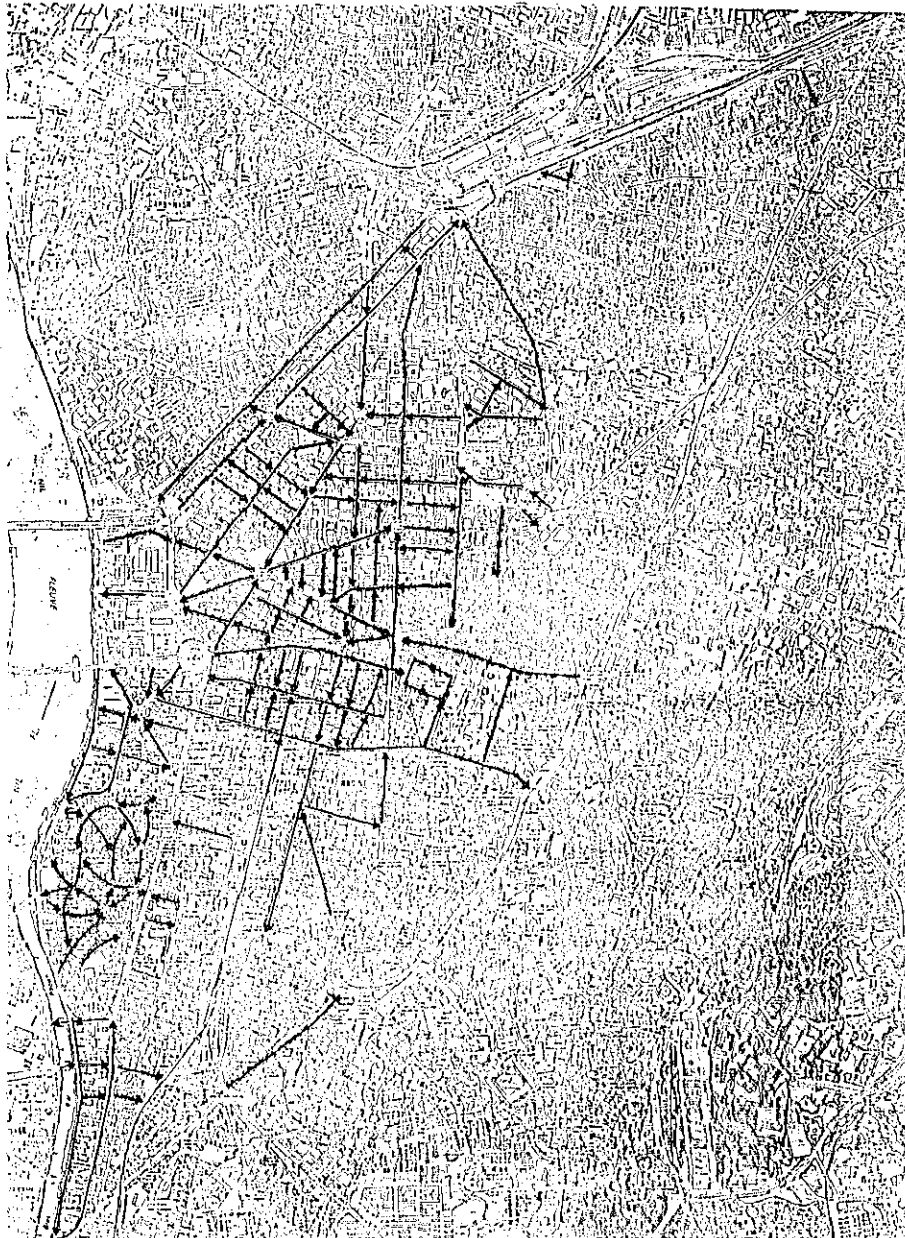


Fig. 4.4.1 One-Way Regulation in CORPS, 1987

2) Speed Limit

The standard speed limit within the urban area is regulated to 50 km/h, except for some arterials with higher design speed as:

6th Oct. Flyover : 60 km/h  
Salah Salem st. : 60 km/h