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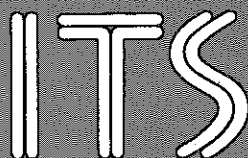
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Patterson, N.S., May, A.D. (1981) *Transport and Inner City Firms: Results of the London Surveys*. Institute of Transport Studies, University of Leeds, Working Paper 145



INSTITUTE FOR TRANSPORT STUDIES
THE UNIVERSITY OF LEEDS

Working Paper 145

April 1981

**TRANSPORT AND INNER CITY FIRMS:
RESULTS OF THE LONDON SURVEYS**

by

N. S. Patterson and A. D. May

Working Papers are intended to provide information and encourage discussion on a topic in advance of formal publication. They represent only the views of the authors and do not necessarily reflect the view or approval of the sponsors.

This work was sponsored by the Department of Transport.

A B S T R A C T

PATTERSON, N.S. and A.D. MAY (1981) Transport and inner city firms : results of the London surveys. Leeds : University of Leeds, Inst. Transp. Stud., WP 145 (unpublished).

Nineteen firms from the South Shoreditch area of LB Hackney were surveyed in Spring 1980 to determine the type, extent and severity of their transport problems. In order to compare and contrast these problems with those of firms located in an outer urban area, twenty firms in the Brimsdown area of LB Enfield were also surveyed. This paper presents the aggregated survey results for each study area.

The most important inner area problems included : congestion and delays on the journey to work, on business and visitor trips, and on commercial vehicle trips; inadequate on-site and on-street parking at the firm and at the destination of business trips; public transport difficulties for the journey to work; on-site difficulties for commercial vehicles; delays during loading; and on-street loading.

The most commonly reported effect of problems was lost time, however there were also instances of reduced efficiency, lost business, vehicle scheduling difficulties and staffing implications such as turnover and recruitment, staff dissatisfaction, the necessity to provide assistance for the journey to work or personal trips, and adjustments to working hours. There was a general inability of management to place a money cost against the problems which they mentioned although when estimates were made the costs were often considerable, and consequently there is the possibility that the impact of problems may be understated by local authorities.

Firms in Brimsdown suffered similar types of problem to firms in South Shoreditch, and in most cases to a similar degree of severity. Solutions applicable to the inner area are therefore likely to be appropriate elsewhere.

This paper is the second in a series reporting the results of surveys of samples of firms in Leeds and London.

CONTENTS

	<u>Page</u>
1. Introduction	1
1.1 Scope of the report	1
1.2 Background	1
1.3 Objectives of the project	2
1.4 Study methodology	2
1.4.1 Basis of the methodology	2
1.4.2 Sampling and study areas	3
1.4.3 Survey design	5
1.4.4 Analysis method	5
1.4.5 Pilot study	8
1.5 Interpretation	8
1.6 Presentation of results	8
2. Study areas and sample selection	10
2.1 South Shoreditch	10
2.2 Brimsdown	16
2.3 Industrial structure of the study areas	19
2.4 Sample selection	20
2.5 Response to the surveys	22
2.5.1 Overall response rates	22
2.5.2 Response to the individual surveys	23
3. Management interview	25
3.1 Interpretation and background	25
3.1.1 Interpretation	25
3.1.2 Background	25
3.2 Problem identification	27
3.3 Group A to C problems : person trips	28
3.3.1 Employee journey to work	28
3.3.2 Business trips	35
3.3.3 Visitor trips	39
3.3.4 Personal trips	43
3.4 Group D to F problems : commercial vehicle trips	46
3.4.1 Group D (on-route to site)	46
3.4.2 Group E (at site)	51
3.4.3 Group F (loading)	52
3.4.4 Other possible problems related to goods and services	54
3.5 Problems not included within groups A to F	55
3.5.1 Other traffic problems	55
3.5.2 Internal problems	55
3.5.3 Other problems	55
3.5.4 Comment	56
3.6 Comparison of group A to F problems	57
4. Parking	60
4.1 Background	60
4.1.1 South Shoreditch	60
4.1.2 Brimsdown	60

	<u>Page</u>	
4.2	On-site parking	61
	4.2.1 On-site parking provision	61
	4.2.2 Survey results	63
4.3	Off-street public parking	65
4.4	On-street parking	66
	4.4.1 General characteristics (South Shoreditch)	66
	4.4.2 Details of firms surveyed	68
4.5	Comparison with other survey results	68
4.6	Some conclusions	70
5.	Employee questionnaire	73
	5.1 Interpretation and background	73
	5.1.1 Interpretation	73
	5.1.2 Background : journey to work	74
	5.1.3 Background : business trips	78
	5.1.4 Background : personal trips	83
	5.2 Group A to C problems : journey to work	85
	5.2.1 Group A (on-route to site)	85
	5.2.2 Group B (parking)	87
	5.2.3 Group C (public transport)	89
	5.2.4 Problems A to C; journey to work; modal comparisons	92
	5.3 Group A to C problems : business trips	95
	5.4 Group A to C problems : personal trips	97
	5.5 Comparison of group A to C problems; all trips	99
6.	Visitor questionnaire	101
	6.1 Background and trip characteristics	101
	6.2 Problem identification	101
	6.2.1 Group A (on-route to site)	101
	6.2.2 Group B (parking)	101
	6.2.3 Group C (public transport)	101
	6.3 Comment	104
	6.4 Some conclusions	106
7.	Commercial vehicle survey	107
	7.1 Background	107
	7.2 Problem identification	107
	7.2.1 Group D (on-route to site)	107
	7.2.2 Groups E and F (on-site and loading problems)	111
	7.3 Some conclusions	115
8.	Problem summary and comparisons of firms	118
	8.1 Outline	118
	8.2 Problem summary; all firms	118
	8.2.1 Person and commercial vehicle trips (groups A to F)	118
	8.2.2 Problems in South Shoreditch	124
	8.2.3 Costings	124
	8.2.4 Other problems	126
	8.2.5 Comparison of the results of the different surveys at the firms	126

	<u>Page</u>
8.3 Comparison between study areas	128
8.4 Comparisons by type of firm	128
8.4.1 Comparison by expanding and declining industries	128
8.4.2 Comparison by industrial classification	131
8.4.3 Comparison by expected level of commercial vehicle activity	132
8.4.4 Comparison by size of firm	135
8.4.5 Comparison by location within the study area	135
8.5 Comparison with problems suggested by the literature	138
9. Conclusions of the London surveys	140
10. References	147
11. Acknowledgements	147
APPENDIX I Road Schemes	148
APPENDIX II Sample selection	151
APPENDIX III Response rates	153
APPENDIX IV Calculation of mean scores	161
APPENDIX V Maximum utilization of parking space	162
APPENDIX VI Employee questionnaire: group C problems	163
APPENDIX VII Brimsdown level crossing	165
APPENDIX VIII Commercial vehicle classification	167

LIST OF TABLES

	<u>Page</u>
1. Possible transport problems of inner city firms	4
2. Surveys conducted at each firm	7
3. Distribution of industry within sampling frame	19
4. Size distribution within sampling frame	20
5. South Shoreditch and Brimsdown; actual samples	21
6. Response rate : overall	22
7. Surveys at each firm	23
8. Response rates to individual surveys	24
9. Management interview : importance of transport	26
10. Management interview : unprompted problems	27
11. Management interview : employee journey to work, group A problems (on-route to site)	28
12. Management interview : employee journey to work, group B problems (parking)	29
13. Management interview : employee journey to work, group C problems (public transport)	30
14. Management interview : effects of journey to work problems	31
15. Management interview : working hour arrangements and travel assistance	33
16. Management interview : business trips, group A problems	35
17. Management interview : business trips, group B problems	36
18. Management interview : business trips, effects of problems	37
19. Management interview : visitor trips, group A problems	39
20. Management interview : visitor trips, group B problems	40
21. Management interview : visitor trips, effects of problems	41
22. Management interview : personal trips	43
23. Management interview : lunch break arrangements	45
24. Management interview : commercial vehicles, group D problems (on-route to site)	46
25. Management interview : effects and costs of congestion/delay problems	47
26. Management interview : effects of delays, goods-in	50
27. Management interview : commercial vehicles, group E problems (at site)	51
28. Management interview : commercial vehicles, group F problems (loading/unloading)	52
29. Management interview : other problems related to goods and services	54
30. Management interview : other problems	56
31. Management interview : comparison of problems	58
32. On-site parking availability	65
33. Parking survey : summary	72
34. Employee questionnaire : mode split (South Shoreditch)	75
35. Employee questionnaire : mode split (Brimsdown)	75
36. Employee questionnaire : car availability	76
37. Employee questionnaire : reasons for not using car	76
38. Employee questionnaire : mean stated travel times	77
39. Employee questionnaire : characteristics of business trips	82
40. Employee questionnaire : personal trips; extent and variation	84

	<u>Page</u>
41. Employee questionnaire : characteristics of personal trips	84
42. Employee questionnaire : group A problems, private mode	85
43. Employee questionnaire : group B problems	87
44. Employee questionnaire : group C problems	89
45. Employee questionnaire : public transport trip data	91
46. Employee questionnaire : modal comparisons	94
47. Employee questionnaire : business trips, group A to C problems	95
48. Employee questionnaire : visitor trips, group A to C problems	97
49. Employee questionnaire : types of problems	100
50. Visitor questionnaire : summary of trip characteristics	102
51. Visitor questionnaire : group A problems	103
52. Visitor questionnaire : group B problems	103
53. Commercial vehicle survey : vehicle movements at each firm	108
54. Commercial vehicle survey : vehicle type	108
55. Commercial vehicle survey : summary of trip characteristics	109
56. Driver interview : group D problems	110
57. Driver interview : group E and F problems	112
58. On-site survey : observed difficulties and delays	112
59. On-site survey : types of observed difficulty	113
60. Commercial vehicle survey : summary	117
61. Problem summary : South Shoreditch	119
62. Problem summary : Brimsdown	121
63. Management estimate of costs	125
64. Differences in results of surveys	127
65. Differences in problem severity	129
66. Condition of premises	130
67. Effect of industrial classification	133
68. Comparison of problems by size of firm	136
69. Comparison of problems by location	137
70. Comparison with other studies	139
71. South Shoreditch : preferred and actual sample - by activity	151
72. South Shoreditch : preferred and actual sample - by size	151
73. South Shoreditch : preferred and actual sample - by location	151
74. Brimsdown : preferred and actual sample - by activity	152
75. Brimsdown : preferred and actual sample - by size	152
76. Brimsdown : preferred and actual sample - by location	152
77. Managements' stated reasons for refusal	153
78. Proportion of firms approached which refused to participate	153
79. Employee questionnaire : sample size	154
80. Characteristics of the workforce : all employees and respondents to employee questionnaire	155
81. Employee questionnaire : representativeness of the sample	156
82. Response rates : employee questionnaire, by firm	157
83. Response rates : employees by sex and job	158
84. Response : visitor questionnaire	159
85. Response rates : commercial vehicle driver interview	160
86. Brimsdown level crossing: hourly traffic volumes	165
87. Brimsdown level crossing: average delay to all vehicles	165

LIST OF FIGURES

	<u>Page</u>
1. Criteria for sample selection	6
2. London study areas	12
3.(a) South Shoreditch study area	13
3.(b) South Shoreditch; traffic management measures	14
3.(c) South Shoreditch; bus routes	15
4.(a) Brimsdown study area	17
4.(b) Brimsdown; rail and bus routes	18
5. On-site parking provision (individual firms)	62
6. On-site parking provision (study areas)	62
7. Proportion of on-site spaces vacant by time of day	64
8. South Shoreditch : average utilization of public off-street car parks	64
9. South Shoreditch : parking duration	67
10. South Shoreditch : utilization of meter spaces	67
11. South Shoreditch and Brimsdown : residential origin of respondents	79
12. South Shoreditch : residential origin by main mode of journey to work	80
13. Brimsdown : residential origin by main mode of journey to work	81
14. Proposed road schemes	150
15. Brimsdown level crossing : commercial vehicle flow	166
16. Brimsdown level crossing : closures	166

TRANSPORT AND INNER CITY FIRMS:
RESULTS OF THE LONDON SURVEYS

1. INTRODUCTION

1.1 Scope of the report

The report summarises the results of surveys of a sample of 19 inner London firms in order to determine the type and severity of transport problems affecting inner city manufacturing and service firms and their employees, and the degree to which those problems affect firms' operations. In order to compare and contrast the problems of inner city firms with those of firms located elsewhere in the urban area, a further 20 firms taken from an outer area of London have been surveyed. The surveys were carried out early in the summer of 1980

The background and objectives of the project and the method which has been adopted to identify and analyse the problems is briefly outlined (Chapter 1).¹ The London study areas, the samples of firms selected for analysis, and the response to the study as a whole and to the individual surveys are summarised. (Chapter 2). Subsequent chapters (3 to 7) deal sequentially with the results of the various surveys conducted at each firm. These are then drawn together (Chapters 8 and 9) to determine a shortlist of the more serious problems and to compare the inner and outer study areas.²

Generally, the results are presented as aggregates of all firms in each study area. Separate case study reports have been prepared for each of the participating firms and are available from the authors. This paper is the second in a series presenting the results of surveys carried out in Leeds (1) and London.

1.2 Background

Transport improvements have been seen by central government as contributing to the economic regeneration of inner areas, and all local authorities have been requested to give their transport programmes an 'inner area dimension' either through existing TPP/TSG's or where

1. See ref. 1 for a fuller treatment.

2. The format follows that used in presenting the results of the Leeds surveys - reference 1.

applicable through the expanded Urban Programme. The initial submissions by partnership and programme authorities under their Inner Area Programmes indicate that local authorities regard transport as an important element in their overall inner area policies. Examination of these IAP's suggests, however, that there is less of a consensus as to what might be the most appropriate type and level of transport investment (2).

Following the White Paper "Policy for the Inner Cities" (3), the Department of the Environment commenced the Inner Area Research Programme. The proposal for this project was submitted at that time, but was seen as more appropriately falling within the responsibility of the Department of Transport.

1.3 Objectives of the project

The objectives of the project are to identify:

- i) the extent to which transport problems affect the operation of inner city firms,
- ii) whether these problems are more severe in the inner city than elsewhere, and
- iii) transport measures which could ease these problems.

The study is designed, firstly, to look in detail at the transport problems which inner city firms face by endeavouring to quantify and, ideally, cost their impact on the firm. Such quantifications should help to place in context employers' statements of their perceived problems, and also the extent to which it is worth the local authority, and the firm, spending money to alleviate these problems. Secondly, it is designed to draw comparisons between firms in inner and outer city locations to determine whether there are differences in the type and severity of their transport problems and whether any solutions identified are likely to be applicable in other parts of the urban area. Thirdly, it is designed to aid policy and programme formulation by identifying and evaluating possible solutions.

Although concentrating on the movement of goods and services and person trips (journey to work, business trips etc.) the study is sufficiently flexible so that other issues which are transport related can be identified and included if they appear to be significant.

1.4 Study Methodology

1.4.1 Basis of the methodology. Because so little quantified information exists, it was decided to start from first principles by

identifying the problems which might exist, checking these against employers' statements of their perceived problems, and designing more detailed surveys of the movements of employees, visitors and inbound/outbound goods and services to quantify the extent of these problems. That is, the approach starts at the individual firm and asks:

- i) is there a problem?
- ii) how large is the problem?
- iii) what is its effect?
- iv) what costs does it give rise to?

From the answers to these questions it determines the type and value of possible solutions. The starting point is hence the identification of likely problems.

A review of the literature (4) provided overall guidelines for the project, an initial listing of possible problems to the firm (Table 1), and a useful basis from which to design the surveys.

1.4.2 Sampling and study areas. It was decided early in the study's development that it would be inappropriate to attempt the large sample required for statistical purposes and instead it was decided to take small groups of firms and treat them as a series of case studies from which more general conclusions for each study area could be drawn.

Two study areas have been selected within districts identified as priority areas under the Inner Urban Areas Act, 1978: the Holbeck Hunslet Industrial Area (HHIA) in Leeds (a programme authority) and the South Shoreditch area in LB Hackney in London (a partnership authority) representing inner area conditions in cities of greatly different size. In addition, two outer urban areas, Stanningley (located between Leeds and Bradford) and the Brimsdown area of L.B. Enfield, have been chosen as outer area controls against which the problems of the inner area firms can be compared. (The criteria for selection of control areas are discussed in ref. 5)

Samples of 12 firms in each of the Leeds areas and 20¹ in each of the London areas have been chosen although it will inevitably not permit a full breakdown of results by, for example, size and activity.²

-
1. Withdrawal of one firm at an advanced stage of the project resulted in a final sample of 19 firms in Inner London.
 2. Smaller samples were adopted for Leeds since it appeared from the pilot study that problems were significantly less severe than in London.

Table 1. Possible transport problems of inner city firms (suggested by the literature)

Nature of problem	Likely effect
<p><u>For employees</u></p> <ul style="list-style-type: none"> - insufficient or expensive car parking both on and off street - congestion on local streets, affecting both car drivers and public transport users - inadequate public transport, in particular inadequate services to some areas, low level of service, unreliability, transfers and cost 	<ul style="list-style-type: none"> - lost time - additional cost - frustration and absenteeism - adverse effect on recruitment and retention of suitable staff
<p><u>For deliveries and visits to and from the firm</u></p> <ul style="list-style-type: none"> - congestion, caused by both parked and moving vehicles - lack of parking space, both on and off streets, for goods vehicles - difficult access to premises along narrow, twisting and badly maintained streets, often not adequately signposted - indirect routing - inadequate on-street loading zones - inadequate loading/unloading facilities and buildings - inadequate manoeuvring space on local streets and within premises - restrictions by local authorities or clients on delivery times, loading zones etc. and lack of concern for firms by local authorities when designing traffic management schemes 	<ul style="list-style-type: none"> - lost time by delays and queueing on local streets and at delivery points - lost time because of extra travel distances - additional delivery costs - restrictions on size of vehicle - delays in vital deliveries - additional stockpiling costs - missed appointments - lost sales and goodwill

The sample is drawn from SIC's 3-19 (manufacturing), 20 (construction) 22 (road haulage) and 23 (distribution). The criteria for sample selection are discussed in ref. 6. Proportional sampling on the basis of standard industrial classification (SIC), ensures that the firms selected are representative of the type of activity, the type of workforce, and the size distribution of all firms in each study area. Two further criteria are applied to ensure that the proportional samples are obtained for firms from (i) SICs which over recent years have been expanding and others which have been declining in terms of their share of the total employment within the urban area concerned,¹ and (ii) SICs which are typically characterised by high, medium and low rates of commercial vehicle activity.¹

A number of other criteria including the necessity to sample from different locations within each study area are applied to determine a final preferred sample. The procedure is outlined in Figure 1.

1.4.3 Survey design Five surveys were conducted at each firm.

Interviews and self-completion questionnaires were used to obtain information from management, employees, visitors and commercial vehicle drivers and cover the possible sources of transport activity of the firm. These were supplemented by on-site data collection to record actual operating conditions. Further details of survey design are contained in refs. 7 and 8. Details of the surveys are shown in Table 2, and the interview schedules, questionnaires and survey forms are reproduced in full in ref. 8.

1.4.4 Analysis method There are three stages in the analysis:

- i) An overall assessment of the type, severity and effect of transport problems; identification of a shortlist of the more serious problems; comparison between inner and outer study areas (using the individual and aggregated results of the surveys described in Section 1.4.3).
- ii) Further more detailed analysis of the serious problems using survey results and other background data obtained from such sources as local authorities.
- iii) Analysis of the range and value of possible solutions.

This paper deals with (i); the results of (ii) and (iii) are to be reported separately. The analysis starts by considering the individual firms as a series of case studies. Results are then aggregated to indicate the number of firms or individuals experiencing a particular problem and the degree of severity of that problem, in each study area.

1. Because of the wide range of activity within each SIC, such a categorisation, while being indicative of the industry as a whole, may not adequately describe individual firms.

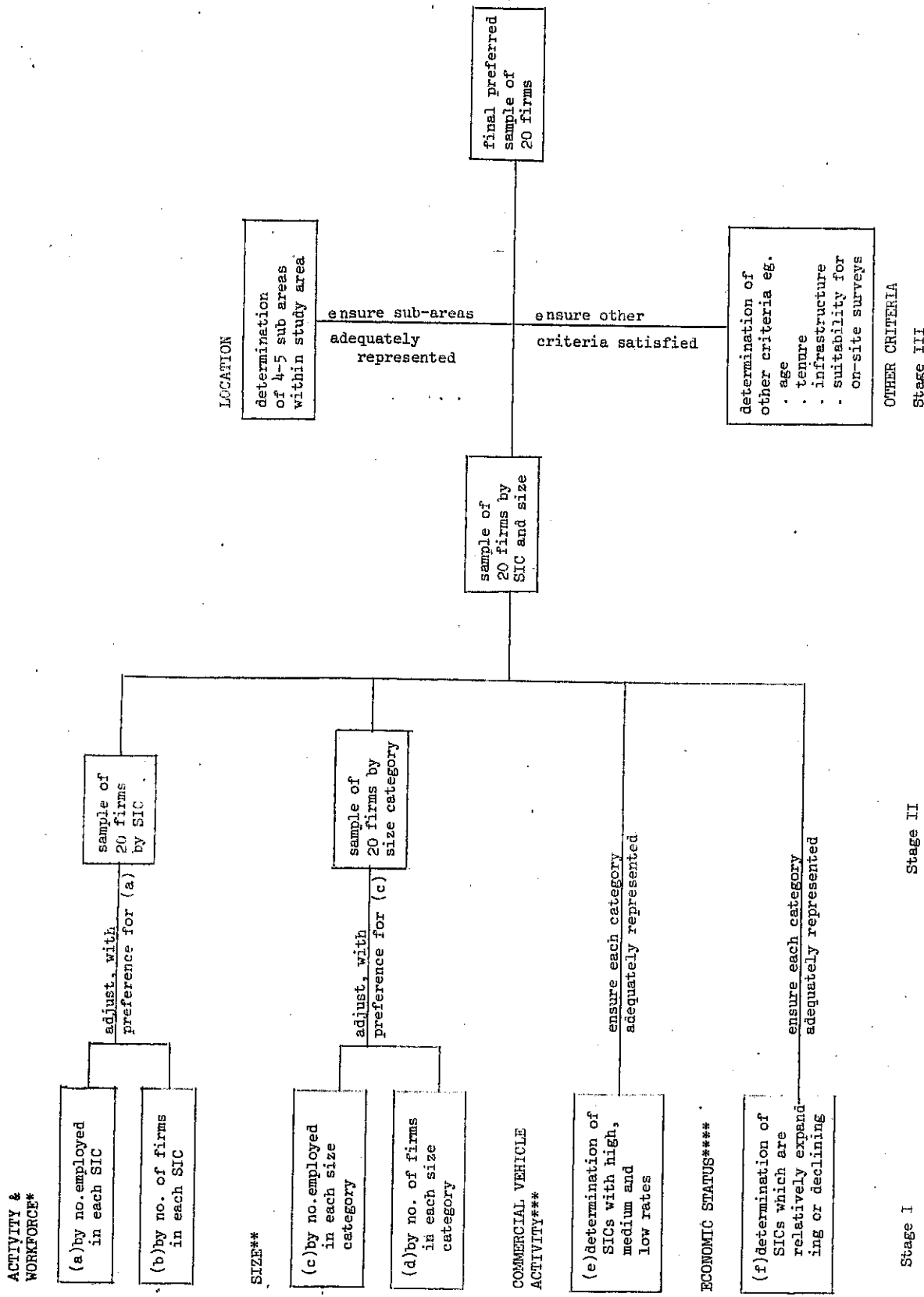


Figure 1 : Criteria for sample selection (for each study area)

* SICs 3-19, 20, 22, 23
 ** Small 5-24; medium 25-99; large 100+ employees
 *** high, medium and low com. veh. generation rates.
 **** SICs expanding or declining in their relative share of total urban area employment.

Table 2. Surveys conducted at each firm

Source ¹	Type of survey	Administration ²
1. Employer (MQ and MI)	a) Written questionnaire relating to background data on the firm b) Management interview based on structured questionnaire - transport operations of the firm; type and effect of transport problems	Distributed during initial personal contact with each firm and collected and checked by ITS interviewer at the time of the management interview. ITS interview staff
2. Employees (EQ)	Written questionnaire applicable to all employees containing 3 sections: i) journey to work ii) personal trips, and iii) business trips during the working day each section relating to background data and identification of problems.	Distributed to all (or where necessary an agreed sample of) employees at place of work; distribution and collection arranged by the firm.
3. Commercial Vehicle Drivers (DI)	Driver interview (of all c.v. drivers), based on structured questionnaire - background data and identification of problems.	ITS staff before vehicle departs premises; each firm surveyed for one full working day.
4. Visitors to the firm (VQ)	Written questionnaire relating to the trip to the firm - background data and identification of problems.	Distributed by firm's staff for completion during the visit; questionnaires distributed to visitors over a period of one week at each firm.
5. On-site survey (OSS)	a) parking at the site and on surrounding streets b) manoeuvring for commercial vehicles c) waiting and delays d) loading/unloading conditions	ITS survey staff; each firm surveyed for one full working day, at the same time as the driver interview (3, above).

1. Abbreviations are used subsequently in the text.

2. I.T.S. refers to staff of the Institute for Transport Studies.

1.4.5. Pilot study. A pilot study of eight firms (four in each of HHIA and Stanningley) was carried out in June 1979, in order to test the adequacy of the overall approach and the design of the individual surveys, as well as determining the usefulness of proceeding with a full sample of firms in the outer control. An evaluation of the pilot and the results of the surveys are reported elsewhere (8, 9).

1.5 Interpretation

Firms in two areas of London have been selected for study. The study areas have been selected in an attempt to minimise any locational factors which would significantly influence the results, and it is intended that the results from this project will be of wider use and provide guidance in assessing the transport situation of inner city firms in general.

Relatively small samples of firms have been drawn from each of the study areas. While the firms selected are representative of different types of industry in these areas, each firm has its own characteristics - location within the study area, premises and buildings, internal policy related to transport, etc. - and may also not necessarily represent the larger variations in activity and nature of operations which may be found within any SIC.

By adopting a case study approach, these characteristics can be treated explicitly on a firm by firm basis. Inevitably, results which are aggregated for each study area will reflect these characteristics, particularly relating to on-site issues and matters of company policy which affect transport operations. Subject to these comments, the summary of transport issues and problems facing two sets of London firms should be useful in assessing the likely range and severity of problems facing firms elsewhere.

1.6 Presentation of results

Chapters 3 to 7 present the results of the various surveys conducted at each firm, aggregated to study area level. For the reporting of problems it has been useful to group those associated with person and commercial vehicle trips into the following seven categories:

person trips (employees' journey to work and personal trips, business and visitor trips)	<u>Group A:</u> problems on-route to site <u>Group B:</u> parking problems <u>Group C:</u> public transport problems
commercial vehicle trips (goods and services)	<u>Group D:</u> problems on-route to site <u>Group E:</u> problems at the site <u>Group F:</u> loading/unloading problems
person or c.v. trips	<u>Other traffic problems:</u> problems which cannot be assigned to groups A to F.

In addition two further categories are used to describe problems that are not directly related to actual trips. These are:

internal problems	problems relating to transport or transport operations resulting directly or indirectly from internal company policy or firms' operating procedures
other problems	any other problems related to transport, firms' transport operations, or to firms' location

In the subsequent chapters different types of trips are treated sequentially and for each trip type the type and extent of problems within Groups A to F are discussed.

2. STUDY AREAS AND SAMPLE SELECTION

2.1 South Shoreditch

The study area is defined by the Hackney Borough boundary to the south, west and east, and by the Grand Union Canal to the north (Figs. 2 and 3). The sub-areas from which the sample of firms was drawn are from the southern half which is predominantly manufacturing and commercial with only a small resident population. The northern half is mainly residential. Industry is traditionally based (e.g. printing/publishing, clothing, furniture/timber) and, following the closure or movement of many of the larger firms, is typically small firms often in multi-occupied pre-1900 premises. The sub-areas used for sample selection have been based on the distribution of industry and characteristics of the transport system and local infrastructure. The study area forms part of the Hackney/Islington Inner City Partnership and shows typical inner city characteristics in terms of age and condition of infrastructure and premises. A large part forms the South Shoreditch Improvement Area, declared in 1979 (Fig. 3). There has been little recent development however the Borough has prepared advance factory units in Willow Street and there are other recent small factory units in the western section of the study area.

Two principal traffic routes cross the South Shoreditch area, the north-south A10 (Kingsland Road - Bishopgate) and the east-west inner ring road (City Road, Old Street, Shoreditch High Street, Great Eastern Street and Commercial Road). A one-way system was introduced on the primary network in the 1960's (Fig. 3.), and there are bus lanes on Kingsland Road, Shoreditch High Street and Old Street to facilitate bus movement. The roads of the secondary network tend to be narrow, badly aligned and in a poor state of repair. Current proposals regarding the road system are listed in Appendix I. Although there are no major works included in the 1981/84 TPP, in the longer term there are proposed improvements to Old Street/Great Eastern Street and Shoreditch High Street/Commercial Street as well as to sections of the inner ring road outside the study area. The South Woodford/Barking Relief Road and the M11/Hackney Link Road are within the trunk road programme of the Department of Transport. Although both are outside the study area they are likely to have a significant effect on through and diverted traffic.

Liverpool Street and Brood Street British Rail stations are immediately south of the study area and provide services to the north

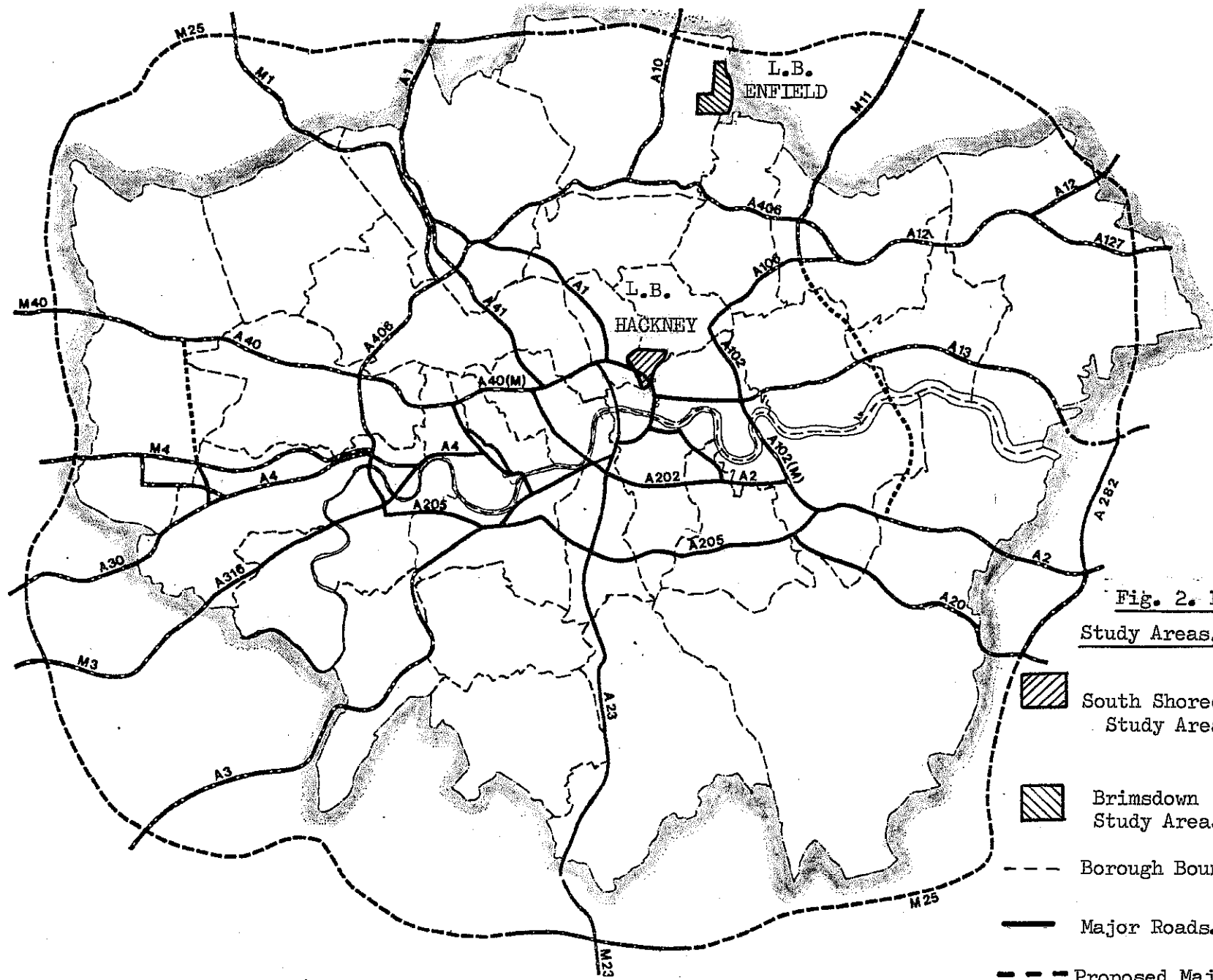







Fig. 2. London Study Areas.

-  South Shoreditch Study Area.
-  Brimsdown Study Area.
-  Borough Boundaries.
-  Major Roads.
-  Proposed Major Roads.

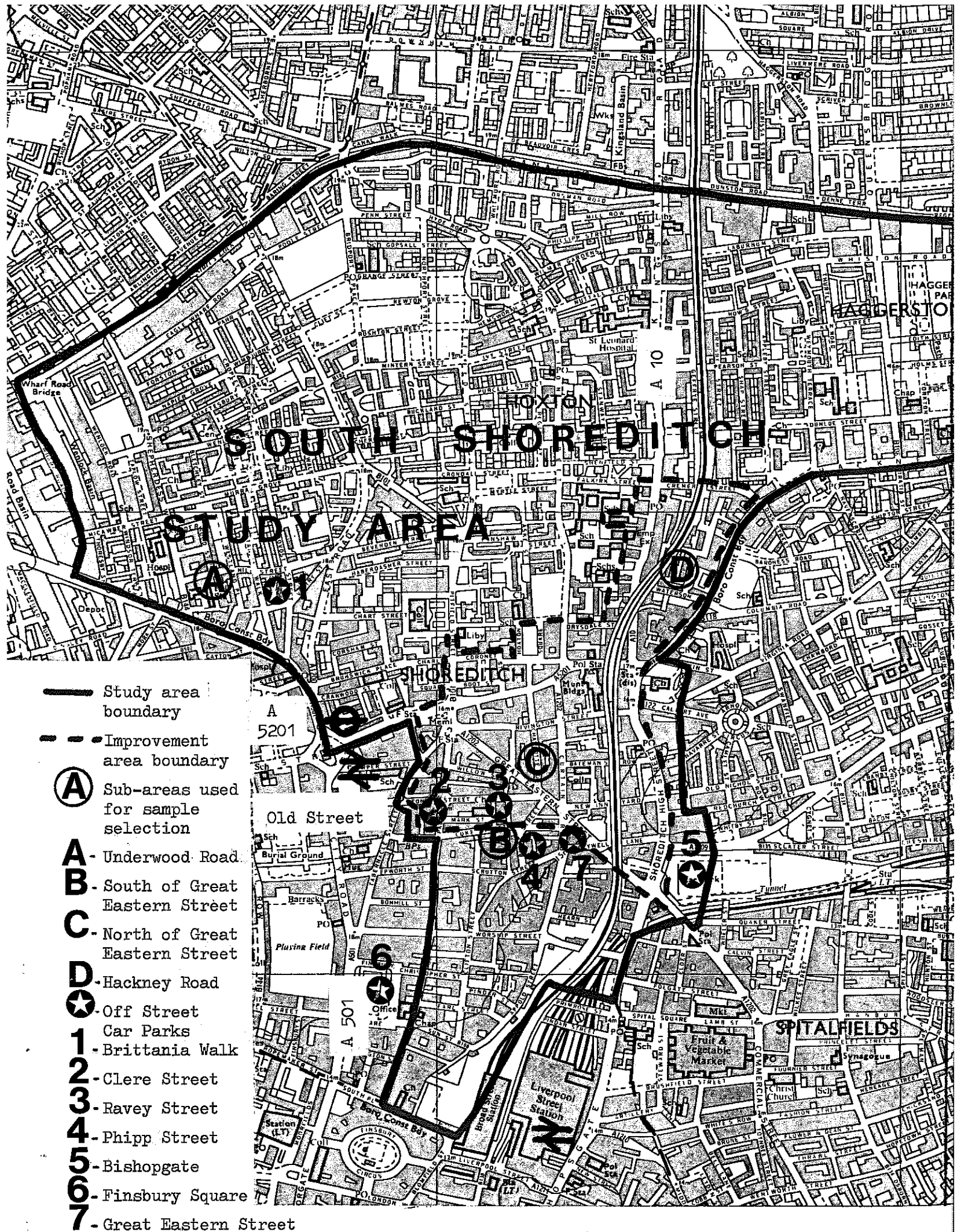
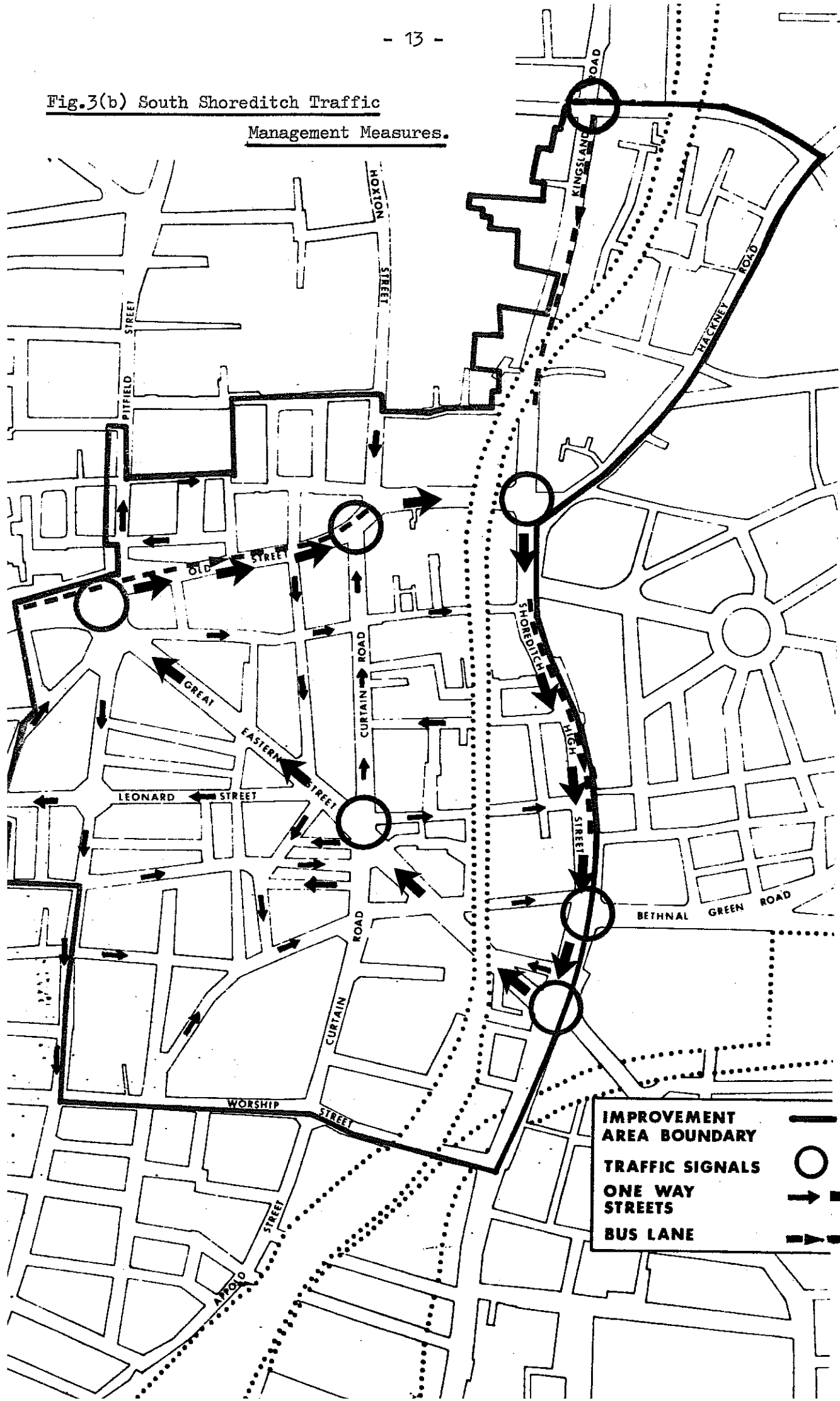


Fig.3(a) South Shoreditch Study Area.

Fig.3(b) South Shoreditch Traffic Management Measures.



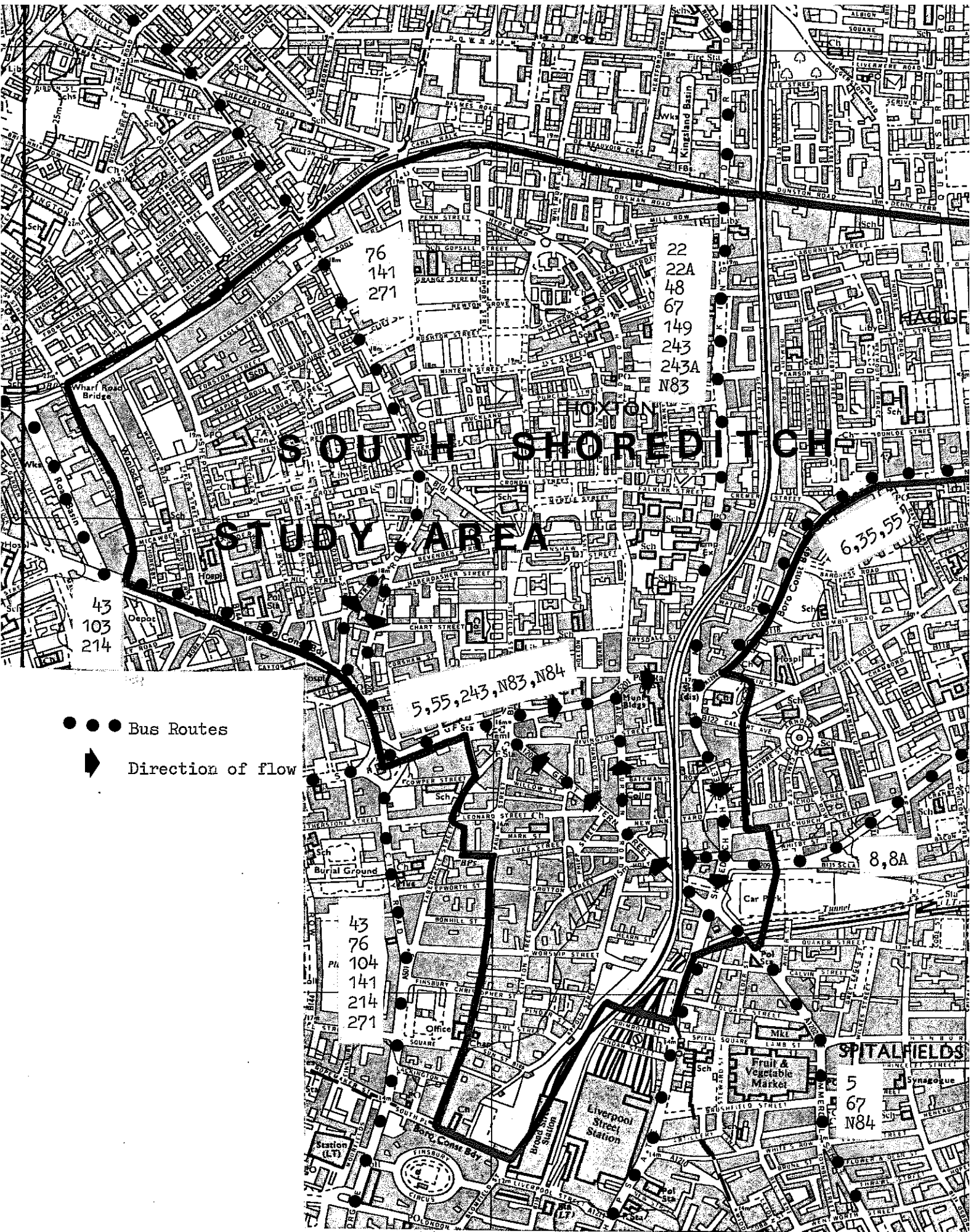


Fig.3(c) South Shoreditch - Bus Routes.

and north-east. There is an underground station on the Northern Line at Old Street, which is also served by British Rail's Moorgate - Hertford /Welwyn Line. A large number of north-south bus routes use City Road and the Kingsland Road/Shoreditch High Street system and provide access to the remainder of the Borough and areas to the north. East-west routes use Old Street. There were minor alterations to bus routes 5, 53, 55 and 56 during 1980/81 and a current programme of British Rail station openings on the re-opened Crosstown Link north of the study area is continuing.

The study area lies within the Inner London Parking Area and the majority is covered by the Shoreditch controlled parking zone. On-street meter space is at or near capacity for most of the day and accounts for only about half of the on-street car-parking (the remainder being illegal yellow line parking). There are five off-street public car parks, three of which are on temporary sites, together with one large site immediately to the south of the study area. Many firms have no off street car parking available within their premises. Loading restrictions apply to most of the primary network and to selected locations on the secondary system.

2.2 Brimsdown

A total of 21 industrial areas north of the Thames were considered as possible outer controls. These were in the A5/A40 Brent and Wembley area north-west of the City; the radial A10 Lea Valley corridor to the north and the radial A11/A12/A13 corridor to the north-east of the inner study area. An initial screening left a short-list of five:

- (i) Angel Road, Edmonton
- (ii) Blackhorse Road, Walthamstow
- (iii) Brimsdown, Enfield
- (iv) Freshwater Road/Selinas Lane, Chadwell Heath
- (v) Great Cambridge Road, Enfield

Following detailed inspection of these it was decided that the Brimsdown Industrial Area of L.B. Enfield best satisfied the criteria for selection of the outer control. (5.)

The final study area adopted is shown in Figs. 2 and 4. It comprises principally the Brimsdown Industrial Area but has been extended west of the Liverpool Street/Hertford East rail line to include areas with a range of access characteristics. There was considerable industrial development around the turn of the century,

during the 1920's and 30's and again more recently in association with the road developments of Mollison Avenue. Much of the industry is engineering based with several very large well established firms. There is a variety of infrastructure, although density of development is relatively low. Within the study area there are virtually no residential areas, however it is surrounded by extensive suburban development.

Major north-south movement west of the study area is via the A10 (Great Cambridge Road) and A1010 (Hertford Road), while Mollison Avenue serves the Brimsdown Industrial Area. The A10 (Lea Valley Road) caters for east-west traffic at the southern end of the study area while Ordnance Road is somewhat lower standard to the north. Traffic management measures include banned turns at Hertford Road/Nags Head Road and in Mollison Avenue. There is a one-way system in Enfield Town, several miles to the west on the A10. The rail line is a serious barrier to east-west movement. While Lea Valley Road is grade separated there are level crossings at Brimsdown and Enfield Lock stations. King George's Reservoir and the River Lea are further barriers to expansion and to movement. Current proposals regarding the road system are listed in appendix I. The principal improvements are the M25 orbital currently under construction to the north of the study area, and the planned upgrading of Mollison Avenue (the North-South Route). Junction improvements at Hertford Road/Carterhatch Road and Hertford Road/Nags Head Road are under active consideration. An appraisal of the traffic network in Enfield Town is expected during 1981 as an insert to the Borough Draft Development Plan.

The British Rail Liverpool Street - Hertford East line forms part of the western boundary of the study area and there are stations at Ponders End, Brimsdown and Enfield Lock. A parallel line to the west (Liverpool Street - Bishop Stortford) has a station at Southbury. There are several bus services in Hertford Road and Southbury Road, and east-west services to the north (no. 107 - Ordnance Road), centre (no. 135 - Green Street) and south (no. 121 - Nags Head Road) of the study area. Several service alterations were introduced in September 1980^I, some of which improved access to the Brimsdown Industrial Area (no. 135 and 231) while others resulted in reduced service frequency (no. 107 and 121).

On-street parking is generally unrestricted except for parts of Mollison Avenue and sections of some roads to the west of the rail line.

I. The surveys of the firms were concluded by this date.

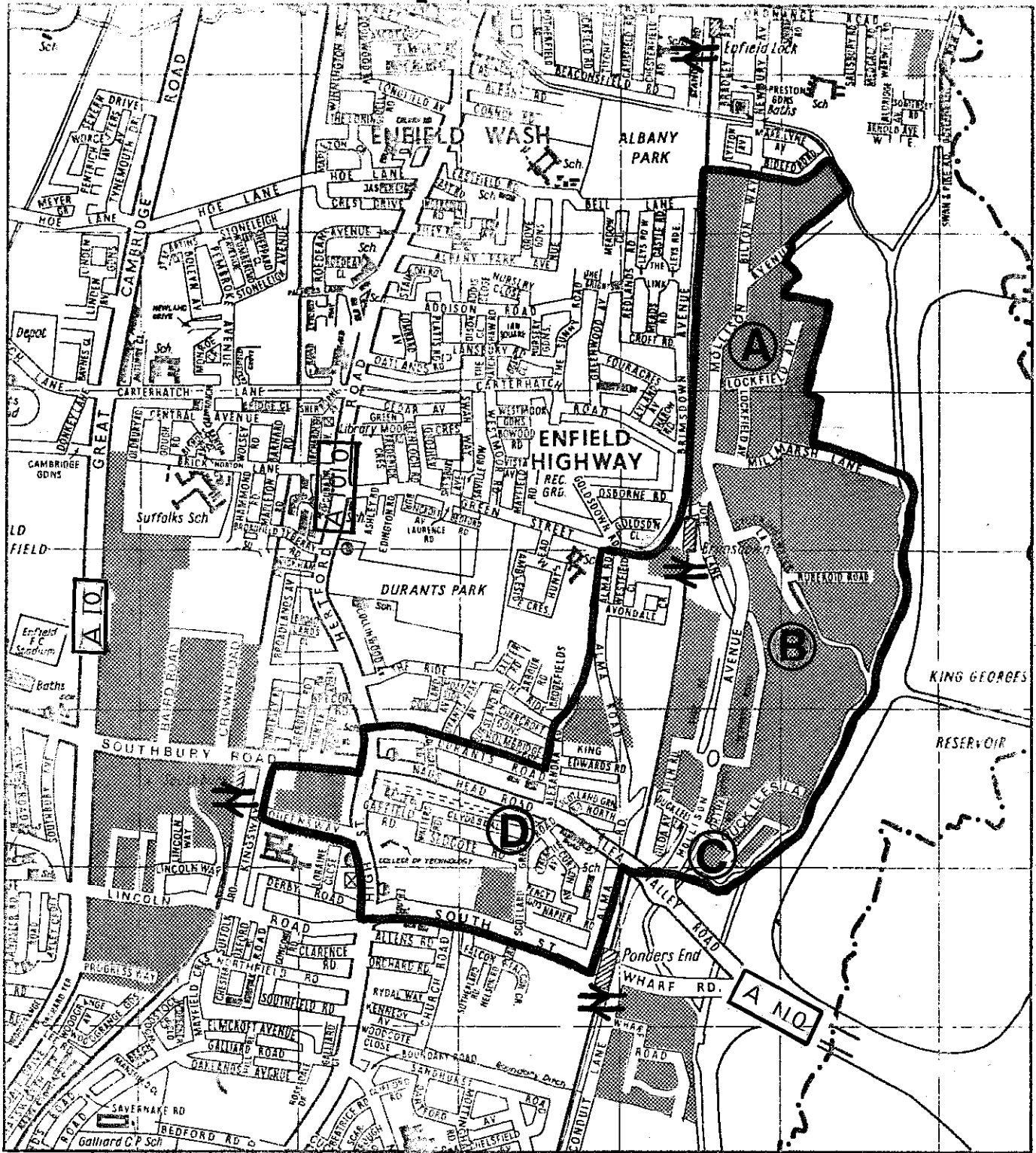





Fig. 4(a) Brimsdown Study Area.

-  Industrial Areas.
-  Study Area Boundary.
-  Sub-areas used for sample selection.
- A** Brimsdown North.
- B** Brimsdown South.
- C** Duck Lees / Ponders End.
- D** West of rail line.

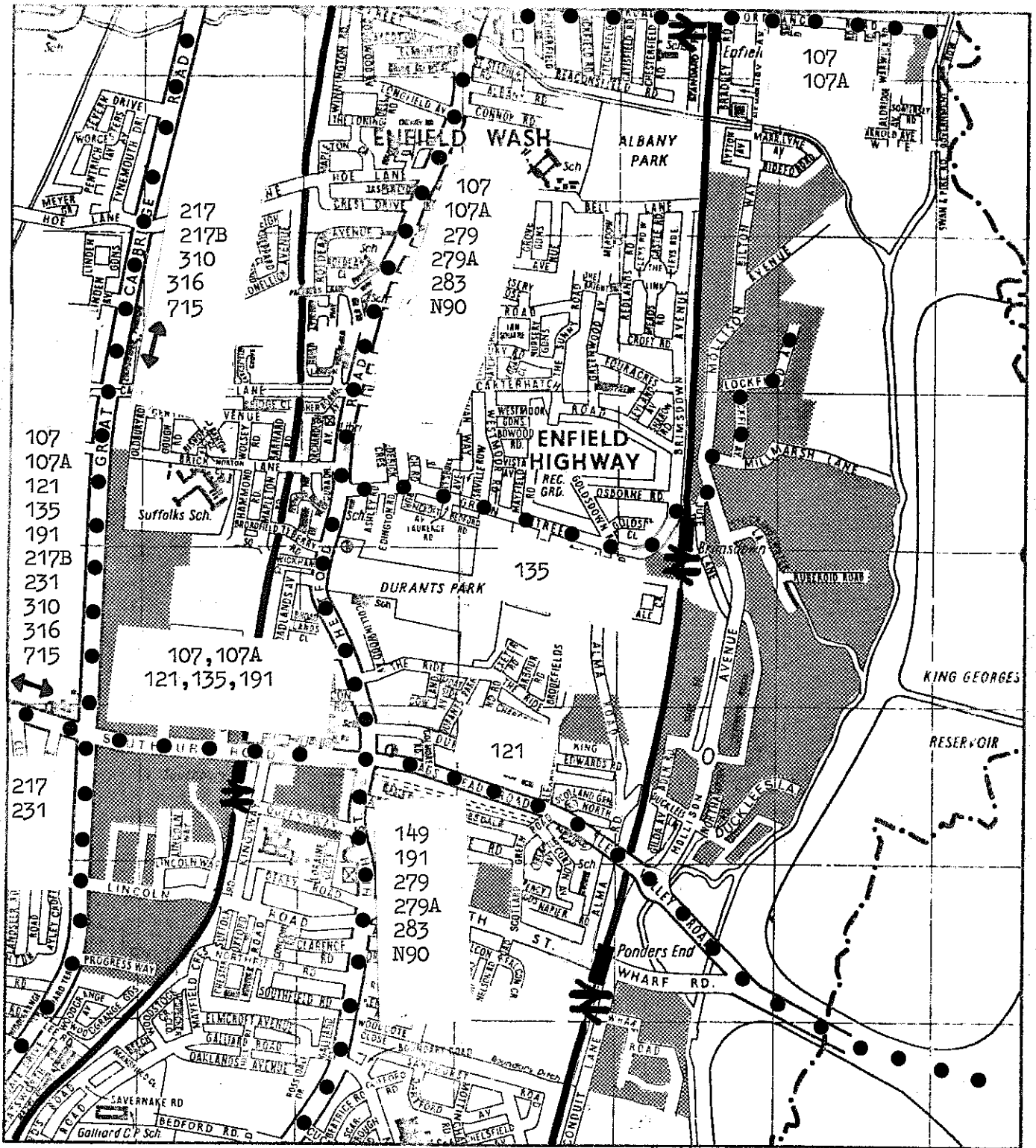


Fig.4(b) Brimsdown - Rail and Bus Routes.

There are no metered spaces. There is a small off-street public car park in Green Street, and a lorry and car park in Jeffries Road.

2.3 Industrial structure of the study areas

Firms from SIC's 3 to 19 (the manufacturing sector), 20 (construction), 22 (transport) and 23 (distributive trades) were considered for inclusion in the sample. The distribution of employment and numbers of firms within these sectors for both South Shoreditch and Brimsdown is shown in Table 3. The overall distribution of numbers employed and numbers of firms by size category of firm is listed in Table 4.

Table 3

DISTRIBUTION OF INDUSTRY WITHIN SAMPLING FRAME (SIC's 3-19, 20, 22 and 23)

SIC	proportion of total employment (%)		proportion of total no. of firms (%)	
	South Shoreditch	Brimsdown	South Shoreditch	Brimsdown
3 Food, drink etc	0	2.3	0	3.0
5 Chemicals etc.	0	1.8	0	2.3
6 Metal manufact.	0	16.8	0	4.5
7 Mech. Engin.	3.0	9.5	1.7	9.8
8 Instrument Eng.	1.8	0	0.8	0
9 Elect. Eng.	9.1	29.9	3.2	9.0
11 Vehicles	0	1.1	0	2.3
12 Metal goods n.e.c	2.4	13.7	4.0	15.0
13 Textiles	0.5	0	1.1	0
14 Leather etc.	3.3	0	5.9	0
15 Clothing etc.	20.4	0.4	22.7	0.8
16 Bricks, pottery etc.	0	3.7	0	3.8
17 Timber, furniture	5.6	0.9	9.7	3.8
18 Paper, printing etc.	19.3	0.3	14.7	4.5
19 Other manufact.	1.9	8.2	3.2	3.8
20 Construction	3.0	1.5	2.5	7.5
22 Transport	12.5	2.6	4.8	7.5
23 Distrib. Trades	17.4	7.2	25.8	22.6
	100.0	100.0	100.0	100.0
Total employment	12800	8546		
Total no of firms			476	133

(totals may not add due to rounding)

Table 4.

SIZE DISTRIBUTION OF SAMPLING FRAME (SIC 3-19, 20, 22 and 23)

(percentage of total employment and percentage of total no. of firms within each size category)

size category of firm	proportion of total employment (%)		proportion of total no of firms (%)	
	South Shoreditch	Brimsdown	South Shoreditch	Brimsdown
Small (5 - 24)	30.1	7.4	75.4	55.7
Medium (25 - 99)	33.2	25.0	20.0	32.3
Large (100 +)	36.7	67.6	4.6	12.0
	100.0	100.0	100.0	100.0

Principal features of the industrial structure which could bear upon the results of the surveys are:

- (i) The relative importance of the clothing and printing industries in South Shoreditch. The former in particular are typified by small firms located in multi-use premises.
- (ii) The predominance of the engineering based manufacturing industries in Brimsdown (especially SIC's 6, 9, 12)
- (iii) Although about one-third of firms in both areas are from the service group (SIC's 20, 22 and 23), in terms of numbers employed these SIC's are less important in Brimsdown than South Shoreditch.
- (iv) The predominance of small firms in South Shoreditch compared with Brimsdown (both in terms of numbers of firms and numbers employed in small firms)

2.4 Sample selection

Using the procedure outlined in Section 1.4.2 and ref. 6. preferred samples of 20 firms in each study area were drawn up. These, and the actual samples finally obtained, are listed in Appendix II and Table 5 gives details of the actual samples. In the case of South Shoreditch one firm withdrew at an advanced stage of the surveys and because of timetabling constraints it was not possible to select a replacement.

Table 5

SOUTH SHOREDITCH AND BRIMSDOWN - ACTUAL SAMPLES

economic status	c.v. generation	SIC	actual sample ^I	
			South Shoreditch	Brimmsdown
declining	high	16	-	1 medium (57)
	medium	14	1 medium (29)	-
		18	2 medium (35,36)	-
			2 large (34,37)	-
	low	6	-	1 medium (45)
				2 large (46,47)
7		1 medium (25)	1 large (48)	
15		1 small (30)	-	
		2 medium (31,32)	-	
	19	1 medium (38)	2 large (58,59)	
expanding	high	22	2 small (39,44)	1 small (60)
		23	4 medium (40,41,42,43)	1 small (61) 3 medium (62,63,64)
	medium	12	1 large (26)	1 small (56) 3 medium (52,53,55)
		17	1 small (33)	1 large (54) -
	low	9	1 large (27)	1 small (51) 2 medium (49,50)
		8	1 large (28) ²	-

1. Numbers in brackets used to identify individual firms in the subsequent analysis.

2. Firm 28 withdrew at an advanced stage of the study.

Consideration of the preferred and actual samples indicates:

- (i) Activity, size and location within the study area are well represented in the South Shoreditch sample.
- (ii) The withdrawal of the firm mentioned above is unlikely to significantly bias the results of the South Shoreditch surveys.
- (iii) In order to adequately represent location in Brimmsdown it was necessary to increase the number of service firms slightly. Partly as a consequence of this, and partly due to severe reorganisation in several firms, SIC 9 (electrical engineering) is somewhat under-represented.

(iii) Continued

The sample from SIC 12 was increased to compensate. Experience with the Leeds surveys suggested that these adjustments would not affect the overall results.

- (iv) Because of both recent staff reductions and reorganizations in several large firms it was necessary to increase the number of medium sized firms in the Brimsdown sample

Given the requirement to simultaneously satisfy a number of selection criteria within a relatively small sample, the actual samples of firms are considered to adequately represent conditions within their respective study areas.

2.5 Response to the surveys

2.5.1 Overall response rates

Firms satisfying the selection criteria were identified and their suitability confirmed by site inspections. Initial contact with these firms was by telephone. Firms expressing interest were supplied with written background information and were visited to further outline the work and discuss participation. The response of firms to the project is shown in Table 6. Details of those firms which declined to participate are given in Appendix III, together with the reasons for refusal. There was no clear indication that refusal was associated with particular SIC groups or size of firm. Contrary to expectations the response rate in the outer area was slightly higher than the inner area.

Table 6

RESPONSE RATE: OVERALL

	South Shoreditch	Brimsdown
number of firms contacted	44	43
contacts not followed up/firm not suitable	8	9
not available for participation at time of surveys but option of future participation left open	0	1
refusal	17	13
final sample	19	20
Response rate on all firms contacted	43.2%	46.5%
Response rate on contacts followed up	52.8%	58.8%

1. It had been suggested early in the study that because of more severe operating conditions inner city firms would be more willing to co-operate.

2.5.2 Response to the individual surveys

Tables 7 and 8 indicate the surveys which were carried out at each firm and the overall responses to the employee self-completion questionnaire and the driver interview. There was no monitoring of the response rate to the self-completion visitor questionnaire.¹ Further details of response rates to the individual surveys and the representativeness of the samples obtained are given in Appendix III.

Table 7

SURVEYS AT EACH FIRM

	Number of firms at which survey conducted	
	South Shoreditch (19 firms)	Brimsdown (20 firms)
Management interview	19	19 ²
Employee questionnaire	18 ¹	18 ^{3,4}
Visitor questionnaire	9	12
Driver interview and on-site survey	19	19 ⁵

1. No completed questionnaires were returned from one small firm (SIC = 15, total employment = 6)
2. Management of one firm (SIC 7, total employment ca. 100) were unable to participate in the interview due to impending closure of the Brimsdown branch.
3. Includes one firm where a 25% sample of employees was taken (SIC 19, employment 216)
4. One firm originally agreed to a sample of employees and subsequently did not distribute questionnaires (SIC 12, employment 708). A second firm did not distribute questionnaires due to unforeseen redundancies and branch closure (SIC 12, employment 22).
5. One firm (SIC 12, employment 708) was unable to participate in the on-site survey for security reasons.

¹. Experience in Leeds suggests a response rate of 15 - 20%.

Table 8

Response Rates to Individual surveys^I

	South Shoreditch (%)	Brimsdown (%)
employee questionnaire ²	47.1 (49.8)	24.4 ³ (43.5) ³
commercial vehicle driver interview	79.9 (81.6)	92.7 (90.6)
visitor questionnaire	not estimated ⁵	not estimated ⁵

1. Numbers tabulated are weighted means. The mean of the response rates at individual firms (unweighted mean) is shown in brackets. Refer to Appendix III for responses at individual firms.
2. Calculated on total stated employment of each firm at which questionnaires were distributed.
3. Response at two large manufacturing firms employing a total of 100⁴ was particularly low (12.3% and 10.1%). If these firms are excluded the response rates become 37.6% and 47.8% respectively.
4. Calculated on effective vehicle movements suitable for interview (i.e. excluding multiple visits).
5. Probably in the range 15-20% of all visitors arriving at the firm.

3. MANAGEMENT INTERVIEW

3.1. Interpretation and background.

3.1.1. Interpretation: The intention of the management interview and associated self completion questionnaire was threefold :

- (i) to provide background information on each firm (summarized in the individual case studies).
- (ii) to allow firms to raise what they perceived to be their transport problems (the interviews were conducted with senior management who could comment on transport, production and personnel aspects of the firm's operation).
- (iii) to record management's assessment of the effects of problems and where appropriate to estimate the cost (or a suitable proxy) imposed on the firm.

The project was presented to management as a study of the transport requirements of urban industry with emphasis on (particularly) the problems associated with person trips and goods movement. An unprompted followed by a prompted approach was adopted for the identification of problems.

Of the three sections of the interview, (iii) above proved the most difficult. Many firms, while recognizing that costs were incurred, were unable to estimate a value or even a range of likely values. In other cases the estimates provided were indicative only.

3.1.2. Background

The importance of transport will depend only in part on a firm's industrial grouping, and there are likely to be large differences both between and within SIC groups. Table 9 provides a background against which the results of the management interview can be viewed and indicates the firms' transport costs and managements' assessment of the importance of transport.

Transport costs followed the expected pattern although there was little variation within the South Shoreditch sample, where values for the manufacturers were at the upper limit of what is usually expected in this group. The values for Brimsdown manufacturers were somewhat lower, while several of the service firms had relatively high transport costs. From Table 9 there were no differences in perceived importance of transport, and seriousness of transport problems, between study areas. On average transport problems were rated fairly to very serious. Business and visitor trips were slightly more important to South Shoreditch firms, and business trips were slightly more important than visitor trips. It is unlikely that these differences were significant.

TABLE 9. MANAGEMENT INTERVIEW : IMPORTANCE OF TRANSPORT

Firm No.	SIC	employment	transport costs (% of non-capital costs)	importance of transport ¹	seriousness of transport problems	importance of business trips	importance of visitor trips
25	7	50	10.0 ⁴	2	4	2	1
26	12	140	d.k. ⁵	1	4	1	1
27	9	331	1.0 ⁵	1	1	1	1
28	n.a.	n.a.	n.a. ⁴	n.a.	n.a.	n.a.	n.a.
29	14	25	2.0 ³	1	3	5	4
30	15	6	10.0 ³	2	3	4	4
31	15	34	10.0 ⁴	1	4	1	1
32	15	46	10.0 ⁴	1	3	1	1
33	17	12	7.0 ⁵	1	1	5	5
34	18	206	d.k.	1	3	2	2
35	18	72	n.s. ³	1	1	1	2
36	18	55	12.0 ⁴	1	1	1	4
37	18	107	1.0 ⁴	2	4	1	3
38	19	25	n.s. ³	1	3	1	3
39	22	11	10.0 ⁵	1	3	3	2
40	23	43	10.0 ⁵	1	1	1	1
41	23	30	n.s.	1	2	4	1
42	23	51	d.k. ⁴	1	2	5	4
43	23	25	11.0 ⁴	1	n.s.	2	4
44	22	14	n.s.	1	4	5	5
Mean score ² , South Shoreditch				96	60	65	60
45	6	34	n.s.	2	4	3	3
46	6	342	n.s.	1	4	1	1
47	6	600	n.s.	1	3	1	1
48	7	100	n.a.	n.a.	n.a.	n.a.	n.a.
49	9	32	n.s. ³	1	2	1	4
50	9	42	8.0 ³	1	5	4	2
51	9	12	2.5 ⁴	1	1	3	4
52	12	58	8.0 ⁴	2	4	2	2
53	12	48	n.s. ³	1	1	3	4
54	12	708	5.0 ³	1	1	4	3
55	12	42	1.0 ⁴	1	4	4	2
56	12	22	4.0 ⁵	3	2	2	4
57	16	60	7.0 ⁴	1	3	3	3
58	19	404	1.0 ⁵	1	2	2	3
59	19	216	32.0 ³	2	2	5	2
60	22	23	54.0 ³	1	1	2	2
61	23	22	2.0 ⁴	1	4	1	4
62	23	92	32.0 ³	1	3	3	3
63	23	56	9.0 ⁴	1	4	3	2
64	23	29	30.0 ⁴	1	2	5	4
Mean score ² , Brimsdown				93	57	57	55

1. 1 = extremely, 2 = very, 3 = fairly, 4 = not very, 5 = not at all.
2. 100 = extremely through to 0 = not at all (See Appendix IV for explanation of mean scores).
3. Estimate includes allowance for vehicle depreciation/replacement.
4. Estimate does not include allowance for vehicle dep/rep.
5. Not stated if estimate includes allowance for vehicle dep/rep.

3.2. Problem Identification.

Unprompted problems mentioned in response to a general question which asked firms to specify their transport problems (and to be as wide-ranging as possible) provided an initial indication of what management saw as their problems. These have been grouped and are listed in Table 10 which shows that management in both areas saw congestion (for cars and goods vehicles) and public transport difficulties as the main unprompted problems. The problem groups, and their effects, were pursued in a subsequent series of prompted questions and are dealt with sequentially in Sections 3.3, 3.4 and 3.5. Details of the responses of individual firms are contained in the case study reports.

TABLE 10. MANAGEMENT INTERVIEW : UNPROMPTED PROBLEMS¹
(Number of firms mentioning each type of problem).

		South Shoreditch (19 firms)	Brimsdown (19 firms)
person trips (employees, visitors)	group A - on route to site	7	12
	group B - parking	1	2
	group C - public transport	7	10
commercial vehicle trips	group D - on route to site	13	12
	group E - at the site	1	2
	group F - loading/unloading	2	1
either per- son or c.v.trips	other traffic problems	5	2
internal problems		1	2
other problems		3	5

1. Average no. of problems mentioned per firm is 2.1 (South Shoreditch) and 2.5 (Brimsdown).

3.3. Group A to C problems : person trips.3.3.1. Employee journey to work.

Group A. (on route to site). Table 11 lists managements' response to possible group A problems.

TABLE 11. MANAGEMENT INTERVIEW : EMPLOYEE JOURNEY TO WORK,
GROUP A PROBLEMS (on route to site).
(number of firms mentioning problem).

	South Shoreditch	Brimsdown
Unprompted	4	12
Prompted ¹	9	7
Stated degree of seriousness of unprompted problems	very 1 fairly 2 not very 1	extremely 1 very 2 fairly 5 not very 3 not at all 1
Types of problem	congestion 12 n.s. 1	congestion 18 indirect route 1
Effects of unprompted problems ²	late arrival 1 staff dissatisfaction and reduced efficiency 1 flexitime introduced to reduce problem 1 recruitment difficulties 1	late arrival 3 staff dissatisfaction 4 alterations to working hours to avoid traffic 3 recruitment difficulties 2 inconvenience 2 no effects 4
Costs incurred (£ per employee per month).	6 firms (20.00, 13.96, 4 d.k.)	8 firms (18.8, 3.33, 2.17, 1.36, 4 d.k.)
Location of unprompted and prompted problems	study area 1 Central London 2 London area 5 n.s. 5	study area 9 London area 4 n.s. 6

1. The prompted question referred to congestion

2. Some firms mentioned more than one effect.

Comment : (i) Congestion was the main problem in both areas.
(ii) Unprompted response rate in Brimsdown was high; on prompting all Brimsdown firms and over two-thirds of South Shoreditch firms mentioned the problem. The higher response in Brimsdown may have been due to the higher proportion of employees using private transport.
(iii) Congestion was a local problem in Brimsdown, whereas in South Shoreditch it was associated with conditions in London generally.
(iv) There was little difference in costs between study areas but effects were more widespread in Brimsdown.
(v) The overall effects of group A, B and C problems are discussed below. See also Chapter 5 for comparison with results of employee questionnaire.

Group B (parking). Table 12 lists managements' response to possible group B problems.

TABLE 12. MANAGEMENT INTERVIEW : EMPLOYEE JOURNEY TO WORK, GROUP B PROBLEMS (parking).

(number of firms mentioning problem).

	South Shoreditch	Brimsgate
Unprompted	1	1
Prompted ¹	9	8
Stated degree of seriousness of unprompted problems	not very 1	fairly 1
Types of problem	inadequate on-site parking 10	inadequate on-site parking 9
Effects of unprompted problems	staff irritation/inconvenience 1	inconvenience 1
Costs incurred (£ per employee per month)	3 firms (2.91, 0.73, 1.00)	3 firms (4.35, 0.18, 1 d.k.)

1. The prompted question referred to shortfall of on-site employee parking.

- Comment : (i) Inadequate employee parking was not seen as an important unprompted issue by management, however when prompted half the firms in each area stated a shortfall.
- (ii) Approx. the same number of firms in each area reported a shortfall and incurred costs.
- (iii) The overall effects of group A, B and C problems are discussed below. See also Chapter 4 for the results of the parking survey and Chapter 5 for employee parking location, walk distance, and perception of parking related problems.

Group C (public transport). Table 13 lists managements' response to possible group C problems.

TABLE 13. MANAGEMENT INTERVIEW : EMPLOYEE JOURNEY TO WORK, GROUP C PROBLEMS (public transport)
(numbers of firms mentioning problem)

	South Shoreditch	Brimsdown
Unprompted	7	10
Prompted ¹	9	8
Stated degree of seriousness of unprompted problems	extremely 2 very 1 fairly 2 not very 1 n.s. 1	extremely 4 very 1 fairly 3 not very 2
Types of problem	frequency 1 reliability 2 congestion 1 cost 2 walk dist. 2 n.s. 10	route coverage 10 reliability 2 cost 1 walk dist. 3 n.s. 8
Effects of unprompted problems	late arrival/lost time 4 staff dissatisfaction 2 inconvenience 1 affects salary structure 1 flexitime introduced to reduce problem 1 turnover/recruitment 2	late arrival/lost time 7 staff dissatisfaction 2 inconvenience 1 affects salary structure 1 alterations to shift hours 1 firm provides tpt. assistance 1 turnover/recruitment 4 indirect effects 1
Costs incurred (£ per employee per month)	4 firms (13.91, 3 d.k.)	11 firms (10.87, 2.17, 1.25, 0.18, 7 d.k.)
Location of unprompted and prompted problems	London area 4 n.s. 11	local area 8 London area 2 n.s. 8

1. The prompted question referred to all aspects of bus travel.

- Comment : (i) Response rates were high in both areas (both unprompted and prompted), as was the degree of seriousness of public transport difficulties.
- (ii) South Shoreditch management did not identify any single aspect of public transport as being the cause of difficulties. Inadequate (bus) service coverage, particularly in the employee catchment areas surrounding the study area, was seen as the main problem in Brimsdown.
- (iii) Effects on firms were similar in both areas. The most commonly mentioned were late arrival/lost time, staff dissatisfaction and turnover/recruitment difficulties.
- (iv) Proportionally more firms in Brimsdown considered that costs were incurred as a result of public transport difficulties (in spite of the fact that relatively few employees in Brimsdown used public transport at present).
- (v) The overall effects of group A, B and C problems are discussed below. See also Chapter 5 for comparison with results of the employee questionnaire.

Effects of group A, B and C journey to work problems

The review of the literature (4) and experience with the Leeds surveys (1) suggested that journey to work problems would affect firms mainly through lost time (and hence reduced productivity), staff dissatisfaction, and difficulties retaining and recruiting suitable staff. A series of prompted questions were designed to determine the extent and severity of these effects, and the results are shown in Table 14.

TABLE 14. MANAGEMENT INTERVIEW : EFFECTS OF JOURNEY TO WORK PROBLEMS

	late arrival of staff		Absenteeism		Staff turnover	
	South S'ditch	B'down	South S'ditch	B'down	South S'ditch	B'down
No. of firms stating problem	15	18	11	13	17	16
Mean score ¹ , severity of problem (all firms)	32	39	22	32	36	32
Mean score ¹ , severity of problem (for those firms stating problem)	40	42	39	46	40	38
Mean score ¹ , importance of transport as a cause of the problem (for those firms stating problem)	61	76	36	21	32	34
No. of firms stating that transport contributed to problem	12	18	7	6	9	10
	Recruitment					
	Sth. Shoreditch			Brimsdown		
No. of firms stating rec't difficulties	17			17		
Recruitment concentrated in partic. areas for transport reasons	12			17		
Recruitment difficulties in partic. areas for transport reasons	5			9		

1. 100 = extremely through to 0 = not at all (See Appendix IV for explanation of mean scores).

Comment : (i) When interpreting Table 14 it should be noted that there may have been transport factors other than the journey to work which affected managements' response in particular difficulties with personal trips (see Section 3.3.4.

(ii) A large proportion of firms in both study areas were affected by journey to work difficulties.

(iii) There were not large differences between study areas in either the number of firms affected or the degree of severity of the effects with the following exceptions:

- late arrival caused by transport difficulties affected more firms in Brimsdown, and to a greater stated degree of severity (see (iv) below),
- transport difficulties were less of a cause of absenteeism in Brimsdown,
- more Brimsdown firms concentrated recruitment in particular areas for transport reasons, and experienced difficulty recruiting in particular areas because of transport factors.

(iv) Transport was an important factor in late arrival. The average time lost through late arrival caused by transport factors averaged over all firms in each study area was:

South Shoreditch : 58.3 mins/employee/month.

Brimsdown : 27.8 mins/employee/month.

and although South Shoreditch management perceived late arrival to be less of a problem than management in Brimsdown, the effect in terms of lost production time was significantly greater in the inner area and represented a considerable cost penalty. Transport factors were estimated to be responsible for approx. 70% of all reported late arrival in South Shoreditch, while the corresponding figure in Brimsdown was around 80%. In view of the apparent importance of public transport difficulties the mode split of 56.0% and 15.7% by public transport¹ in South Shoreditch and Brimsdown respectively may explain a large part of the difference in average time lost per employee.

(v) Absenteeism and turnover problems were seen by management to be as important as late arrival. While mean scores suggested that transport was less of a contributory factor than for late arrival, it nevertheless remained significant and taken together with recruitment problems the combined effect of transport was considerable.

1. See Chapter 5, Tables 34 and 35.

(vi) Recruitment of suitable staff affected nearly all firms irrespective of activity or location, and many firms attempted to recruit locally in order to minimize journey to work difficulties. Competition for labour from surrounding industrial areas together with its location in relation to the transport network and public transport services made this particularly difficult in Brimsdown.

(vii) Recruitment difficulties were experienced with the following categories of employees :

	<u>South Shoreditch</u>	<u>Brimsdown</u>
Managerial/professional	9	5
Office (clerical/technical)	13	7
Skilled	14	10
Semi-skilled	5	11
Other (incl. unskilled)	6	10
difficulty with at least one category	<u>17 firms</u>	<u>17 firms</u>

In terms of existing mode split and the potential to reduce retention/recruitment difficulties through transport improvements the high public transport use (particularly bus) by office staff in South Shoreditch and of private transport by skilled and semi-skilled Brimsdown employees are worth noting. Public transport, walk and other modes were relatively more important for unskilled Brimsdown employees although private transport was still the dominant mode.

(viii) The effects discussed above depend to some extent on work hour arrangements and firms' policy towards travel assistance for employees. These are summarized in Table 15.

TABLE 15. MANAGEMENT INTERVIEW : WORKING HOUR ARRANGEMENTS AND TRAVEL ASSISTANCE.

	South Shoreditch	Brimsdown
Flexitime/variable hours system	9 ¹	3 ²
Travel assistance ³ :		
(i) financial assist. for pub. tpt.	4	2
(ii) petrol allowance	1	2
(iii) provision of transport services (e.g. works bus)	1	3
total	<u>6</u>	<u>6⁴</u>

1. Informal system for office staff only - 2 firms; excluding some operatives - 1 firm.
2. Office staff only - 1 firm; female part-time employees - 1 firm; $\frac{1}{2}$ hour variation in start/finish time permitted - 1 firm.
3. May not necessarily apply to all employees.
4. One firm provided financial assistance and transport services.

Flexitime was more widespread in South Shoreditch. Five of the nine firms which operated a system stated that time was lost through late arrival compared with seven out of the ten firms working fixed hours, and firms operating a system rated the importance of transport as a factor in late arrival with a mean score of 36 compared with 58 for those which did not. There appeared to be considerable benefit in terms of reduction in lost time (and staff dissatisfaction) and, especially in Brimsdown, considerable scope for the introduction of schemes.

Almost one-third of firms in both areas provided some form of travel assistance for at least some of their employees. Financial assistance was the most popular, although provision of transport services (picking up employees) was considered necessary by three Brimsdown firms. It is interesting to note that all three stated that time was lost through late arrival.

3.3.2. Business trips

Group A (on route to site). Table 16 lists managements' response to possible group A problems.

TABLE 16. MANAGEMENT INTERVIEW : BUSINESS TRIPS, GROUP A PROBLEMS
(on route to site)
(number of firms mentioning problem)

	South Shoreditch	Brimsgdown
Unprompted	4	0
Prompted ¹	9	9
Stated degree of seriousness of unprompted problems	extremely 2 very 1 fairly 1	n.a.
Types of problem ²	congestion 13 indirect routeing 2	congestion 9
Effects of unprompted problems	lost time 3 lost revenue 1 lowered efficiency 1 careful planning of trips req'd 1	n.a.
Costs incurred (£ per employee per month)	8 firms (12.50, 2.73, 0.72, 5d.k.)	4 firms (7.14, 3 d.k.)
Location	London 5 S.E. region 1 n.s. 4	Study area 4 London 2 n.s. 3

1. The prompted question referred to problems with business travel in general.

2. Some firms mentioned more than one problem

Comment: (i) Congestion was the only group A factor affecting firms.

(ii) Although lost time was the main effect there were also implications in terms of lowered efficiency and loss of business.

(iii) Congestion was seen as London wide by South Shoreditch management and because most of the business trips from these firms were within the London area¹ a high proportion of firms incurred costs. On the other hand most Brimsdown business trips were to locations outside London¹, congestion was much more associated with conditions within the study area, and fewer firms incurred costs.

(iv) Overall effects of business trips are discussed below. See also Chapter 5 (employee questionnaire).

1. See Chapter 5, Table 39.

Group B (parking). Table 17 lists managements' response to possible group B problems.

TABLE 17. MANAGEMENT INTERVIEW : BUSINESS TRIPS, GROUP B PROBLEMS

(parking)

(number of firms mentioning problem)

	Sth. Shoreditch	Brimmsdown
Unprompted	0	1
Prompted (i) on-site pkg ¹	6	3
(ii) pkg. elsewhere	6	2
Stated degree of seriousness of unprompted problems	n.a.	not very 1
Types of problem	On-site pkg. s'fall 6	On-site pkg. s'fall 3
	Inadequate pkg. elsewhere 6	Inadequate pkg. elsewhere 2
		Pkg. fines 1
Costs incurred (£ per employee per month)	4 firms (4 d.k.)	2 firms (0.04, 1 d.k.)

1. One prompted question referred to shortfall of on-site parking for company cars, and a second to general problems.

Comment: (i) On-site availability was more restricted in South Shoreditch than Brimmsdown (confirmed by the parking survey), but few firms were affected or incurred costs as a result.

(ii) Parking at destination was more of a problem for South Shoreditch trips, probably because proportionally more destinations were in central London.

(iii) Overall effects are discussed below. See also Chapter 4 (parking surveys) and 5 (employee questionnaire).

Group C. (public transport)

The average stated proportion of business trips by public transport in South Shoreditch was 10-12%, with only about two-thirds of the firms stating that they used public transport at all¹. There was virtually no usage of public transport for business trips in Brimmsdown. Only one South Shoreditch firm mentioned a problem related to public transport for business trips viz. frequency and reliability of underground services, which resulted in lost time but no direct costs.

1. The employee questionnaire (Table 39) suggested a higher proportion of trips by public transport - around one-third of all trips.

Effects of group A to C problems

Table 18 lists the effects of problems associated with business trips.

TABLE 18 MANAGEMENT INTERVIEW : BUSINESS TRIPS, EFFECTS OF PROBLEMS

	South Shoreditch	Brimsdown
No. of firms for which business trips were important	15	17
Mean score ¹ ; degree of importance	65	57
No. of firms for which business trips were inconvenienced by transport factors.	15	17
Mean score ¹ ; degree of inconvenience	69	51
Operations affected	8	6
Type of effect (prompted)	Gp.A: lost time 4 lost orders 3 increased staffing 2 inconvenience 2 Gp.B: lost time 2 lost orders 3 increased staffing 2 reduced efficiency 1 inconvenience 1	Gp.A: lost time 6 lost orders 3 inconvenience ² Gp.B:lost time 2

1. See Appendix IV for explanation of mean scores.

Comment (i) Although inadequate parking in central London contributed to difficulties, the main problem seen by management was congestion and the time lost as a result. This lost time reduced effectiveness of the relevant staff to the extent that orders were lost or it was necessary to increase staffing levels.

(ii) The number of firms suffering the effects of lost time was about the same in both areas, although costs fell more heavily on South Shoreditch firms (Table 16) where a higher proportion of business trips took place in the (congested) London area. The degree of inconvenience was considered greater by South Shoreditch management, although it was high in both areas.

(iii) Management found it difficult to separate the relative costs and effects due to group A and to B problems. In many cases the effects resulted from the combined problems of congestion and parking availability at trip destination.

(iv) In view of the stated difficulties and costs with car/van trips management must consider that public transport service levels were such that they did not offer a viable alternative. While this would be the case for many business trips¹ it was strange that there was not more use of public transport for central area trips by South Shoreditch firms.

1. e.g. many short calls to dispersed locations.

3.3.3. Visitor trips.

Group A (on route to site). Table 19 lists managements' response to possible group A problems.

TABLE 19. MANAGEMENT INTERVIEW : VISITOR TRIPS, GROUP A PROBLEMS
(on route to site) .
(number of firms mentioning problem)

	South Shoreditch	Brimsdown
Unprompted	0	0
Prompted ¹	13	10
Stated degree of seriousness of unprompted problems	n.a.	n.a.
Types of problem ²	difficulty finding 2 congestion 11 indirect routeing 2	difficulty finding 1 congestion 9 delays at level crossing 1
Effects of unprompted problems	n.a.	n.a.
Costs incurred (£ per employee per month)	2 firms (2 d.k.)	1 firm (1 d.k.)
Location	Study area 5 n.s. 10	Study area 5 London 2 n.s. 3

1. The prompted question referred to visitor problems in general.

2. Some firms mentioned more than one problem.

Comment : (i) The low unprompted and subsequent high prompted response indicated that while management recognised that there were problems for visitors caused mainly by congestion, these problems did not seriously affect the firm. Consequently few firms stated that costs were incurred, and for those which did, management had little idea of what those costs might be.

(ii) The overall effects of visitors problems are discussed below.

(iii) See also Chapter 6 for results of visitor questionnaire.

Group B (parking). Table 20 lists managements' response to possible group B problems.

TABLE 20. MANAGEMENT INTERVIEW : VISITOR TRIPS, GROUP B PROBLEMS (parking).

	South Shoreditch	Brimsdown
Unprompted	0	1
Prompted	6	3
Stated degree of seriousness of unprompted problems	n.a.	fairly 1
Types of problem	inadequate on-site and on-street parking 6	inadeq.on-street pkg. 1 inadeq. on-site pkg. 3
Effect of unprompted problem	n.a.	inconvenience
Costs incurred (£ per employee per month)	1 firm (1 d.k.)	1 firm (1 d.k.)

1. The prompted problem referred to inadequate on-site and on-street parking for visitors.

Comments: (i) The relatively worse on-site parking conditions in South Shoreditch are supported by the parking survey. Management, however, saw little effect of the difficulties which inadequate parking caused visitors and effects may have been underestimated.

(ii) The overall effects of visitor problems are discussed below.

(iii) See also Chapter 4 for the results of the parking survey, and Chapter 6 for results of the visitor questionnaire.

Group C (public transport). No firms in either study area reported difficulties for visitor trips caused by public transport. The visitor questionnaire (Chapter 6) indicated that almost all visitors used private transport.

Effects of group A and B problems.

Table 21 lists the effects of problems associated with business trips.

TABLE 21. MANAGEMENT INTERVIEW : VISITOR TRIPS, EFFECTS OF PROBLEMS

	South Shoreditch	Brimsdown
No. of firms for which visitor trips were important	15	19
Mean Score ¹ ; degree of importance	61	55
No. of firms for which visitor trips were inconvenienced by transport factors	15	17
Mean Score ¹ ; degree of inconvenience	56	37
Operations affected	5	2
Types of effect (prompted)	Gp.A:lost orders 2 inconvenience 4 Gp.B:lost orders 2 inconvenience 3	Gp.A:lost orders 2 inconvenience 1 Gp.B: nil

1. See Appendix IV for explanation of mean scores.

Comment: (i) There was little difference in the importance of visitor trips between study areas. Although trips were important for more firms in Brimsdown, those South Shoreditch firms for which trips were important attached a higher stated degree of importance to them.

(ii) South Shoreditch management considered visitor trips to be more affected by transport factors than was the case in Brimsdown.

(iii) Although visitor trips were rated as important as business trips in the respective study area, inconvenience caused by transport was perceived as less for visitor trips than for business trips, which suggested that managements were either less aware of or less interested in the problems of their visitors than they were in trips by their own employees.

(iv) Trip characteristics and study area parking conditions caused more South Shoreditch firms to be affected as the result of problems experienced by visitors¹. The effects were often seen by management as a combination of congestion and parking difficulties.

(v) In view of the stated difficulties, costs, and effects of their own business trips it is somewhat surprising that management did not perceive greater effects from visitor trips.

(vi) See also Chapter 6 for results of the visitor questionnaire.

1. e.g. a higher proportion of trips from (congested) London areas compared with Brimsdown - See Sect. 6.1.

3.3.4. Personal Trips

Personal trips were trips by employees during the day for lunch, shopping and services such as bank, dentist etc. Management were asked a prompted question relating to difficulties with, and effects of, personal trips. The responses are listed in Table 22.

TABLE 22. MANAGEMENT INTERVIEW : PERSONAL TRIPS

	South Shoreditch	Brimmsdown
Unprompted	0	0
Prompted		
(i) inadequate local facilities	5	12
(ii) transport difficulties	6	13
Types of problem		
(i) group A (on route)	2	2
(ii) group B (parking)	0	0
(iii) group C (public tpt.)	4	8
(iv) other (inadeq. time for trip)	2	2
Assistance provided by firm	0	5
Operations affected	0	0 ²
Costs incurred	0	0 ¹
Paid time lost	7	6

1. Although not stated by management, the transport assistance provided inevitably resulted in a cost to the firms concerned.
2. One firm did not work Friday p.m. so that staff could make personal trips.

Comment: (i) Brimmsdown was relatively worse off with regard to both provision of facilities and transport services to reach them. This was particularly so in the industrial areas east of the rail line (sub-areas A, B and C) where local facilities comprised two lunch shops. At the time of the survey the only bus route which served the central part of this area (No. 135 service) terminated at Brimmsdown Station during the off-peak. The nearest centres with a full range of services were Enfield Town Centre several miles to the west, and the Hertford Road area of sub-area D.

(ii) A significant number of firms in Brimsdown found it necessary to provide some form of travel assistance. Three firms allowed company vehicles to be used to give lifts, one firm used a company vehicle to collect lunch orders, and a fifth (a large manufacturer employing 708 persons) used a coach for shopping trips to Enfield Town Centre twice a week. In addition a high proportion of trips in Brimsdown were by private mode.

(iii) In spite of the relatively worse situation in Brimsdown, the number of firms which lost paid time was less than in South Shoreditch, and of the five Brimsdown firms which provided assistance, three reported losing time.

(iv) Estimated paid time lost : (minutes/employee/month)
(firms 49, 51 and 60 provided travel assistance).

South Shoreditch			Brimsdown		
Firm No.	empl't	time lost (mins/employee/ mth)	Firm No.	empl't	time lost mins/empl- oyee/mth)
27	331	1.45	47	600	dk
31	34	dk	49	32	7.50
32	46	dk	51	12	40.00
36	55	dk	58	404	0.59
37	107	2.24	60	23	78.26
41	30	24.00	61	22	5.45
43	23	dk			

Where management was able to make an estimate, it appeared that in most cases time lost was small in relation to total employment. Firms 41, 51 and 60 were exceptions. The average time lost for those firms stating that time was lost was 3.08 and 5.84 minutes per employee per month in South Shoreditch and Brimsdown respectively. This was 5.3% and 21.0% respectively of time lost through late arrival due to transport difficulties in the two study areas, and confirmed the relatively worse situation regarding personal trips in Brimsdown

(v) There was no indication in the management interview of the extent to which difficulties with personal trips might have led to employee dissatisfaction and retention and recruitment problems.

(vi) Paid time lost depended to some extent on firms' policy towards employees extending the lunch break to enable trips to be completed. The lunch break arrangements are listed in Table 23. Most firms allowed the lunch break to be extended. While equal numbers of firms allowed extra time to be taken, the attitude to paid time was more lenient in South Shoreditch which was somewhat surprising given Brimsdown managements' recognition of the problems faced by their employees.

TABLE 23. MANAGEMENT INTERVIEW : LUNCH BREAK ARRANGEMENTS

	South Shoreditch	Brimsdown
Lunch break can be extended:		
- with pay	10 ¹	6 ³
- with pay for some staff, without pay for others	4	2 ⁴
- without pay	2	8
Lunch break cannot be extended	3 ²	3
TOTAL	19	19

1. Incl. 1 firm where extra time could only be taken for important trips (e.g. doctor).
2. Incl. 1 firm which operated a flexitime system.
3. Incl. 2 firms where extra time could only be taken for important trips.
4. Incl. 1 firm where extra time could only be taken for important trips.

(vii) Facilities and public transport services were not distributed evenly in either South Shoreditch or Brimsdown, and a firm's location within the study area was an important determinant of the extent of difficulties with personal trips. Firms in sub-area A were relatively worse off than other parts of South Shoreditch¹. Sub-areas A, B and C in Brimsdown were all badly placed.²

(viii) See also Chapter 5 for the results of the employee questionnaire.

1. Underwood Street /Shepherdess Walk/Britannia Walk - see Fig. 3.
2. Those areas east of the Liverpool Street-Hertford East rail line - see Fig. 4.

3.4. Group D to F problems : commercial vehicle trips.

3.4.1. Group D (on route to site). Table 24 lists managements' response to possible group D problems.

TABLE 24. MANAGEMENT INTERVIEW : COMMERCIAL VEHICLES, GROUP D PROBLEMS
(on-route to site).
(number of firms mentioning problem).

	Sth. Shoreditch	Brimsdown
Unprompted	13	12
Prompted :		
(i) congestion	1	4
(ii) indirect route/one-way streets	3	6
(iii) poor road surface	8	3
(iv) height or wt. restrictions	1	2
Stated degree of seriousness of unprompted problems		
extremely	7	4
very	4	3
fairly	5	4
not very	1	4
n.s.	1	
Types of unprompted problem		
congestion	13	9
indirect routeing	1	7
narrow roads	1	1
delays by pkd. vehicles	1	2
No. of firms affected by Group D problems	10	12
Types of effect	see Table 25	see Table 25
Costs incurred (£/commercial vehicle movement)		
(i) congestion (incl. level crossings) - see Table 25	12 firms (average = 2.38, 2 dk.)	13 firms (average = 0.96, 7 dk.)
(ii) indirect routeing	3 firms (3 dk)	3 firms (3 dk)
(iii) poor road surfaces	4 firms (0.25, 0.12, 2 dk)	2 firms (1.25, 1 dk)
Location (congestion only)		
Study area	2	6
London	8	6
Elsewhere	1	
n.s.	2	

TABLE 25. MANAGEMENT INTERVIEW : EFFECTS AND COSTS OF CONGESTION/
DELAY PROBLEMS

EFFECTS	Sth.Sh'ditch	Brimsdown
No. of firms affected by Gp.D problems	10	12
Types of effect :		
(i) lost time	9	9
(ii) lost business (incl. reduced deliveries)	4	5
(iii) lost production	1	1
(iv) difficulties scheduling	7	2
(v) reduced efficiency	2	0
(vi) increased overtime	2	1
(vii) staff dissatisfaction	2	2
(viii) increased veh. wear/tear	2	0
(ix) other	2	1

Table 25 continued on page 48.

TABLE 25 (Cont'd) COSTS (£ per commercial vehicle movement)

South Shoreditch					Brimsdown				
Firm No.	Empt.	c.v. move'ts (per mth)	total cost (£ per mth)	cost/c.v. movement (£)	Firm No.	Empt.	c.v. move'ts (per mth)	total cost (per mth)	cost/c.v. movement (£)
25	50	180	450	2.50	49	32	20	40	2.00
26	140	160	d.k.	d.k.	51	12	160	200	1.25
27	331	220	240	1.09	52	58	140	d.k.	d.k.
29	25	140	600	4.29	53	48	180	d.k.	d.k.
34	206	380	d.k.	d.k.	54	708	n.a.	d.k.	d.k.
35	72	240	800	3.33	56	22	120	d.k.	d.k.
36	55	300	450	1.50	57	60	60	d.k.	d.k.
37	107	420	d.k.	d.k.	58	404	200	d.k.	d.k.
39	11	200	300	1.50	59	216	340	100	0.29
40	43	400	600	1.50	60	23	160	175	1.09
41	30	280	500	1.79	62	92	400	115	0.29
43	25	180	700	3.89	63	56	120	100	0.83
					64	29	300	d.k.	d.k.
12 firms average : £2.38					13 firms average : £0.96				

Comment: (i) The unprompted response rate and stated degree of severity were both high.

(ii) Congestion was seen as the main issue, with indirect routeing contributing to the difficulties. The level crossings in Brimsdown caused delays for trips to 7 firms. The commercial vehicle survey suggested that only about 10% of trips were affected by the Brimsdown crossing¹, although there were long average delays for these vehicles. (Chapter 7 and Appendix VII). It is not known to what extent re-routeing to avoid the crossings added to travel costs or to congestion difficulties elsewhere.

(iii) Poor road surface referred to conditions within one mile of the site, and was mentioned by proportionally more firms in South Shoreditch.

(iv) Congestion was seen as a London wide problem by South Shoreditch management whereas in Brimsdown it was much more associated with conditions in and adjacent to the study area. This largely reflected the differences in trip characteristics between the two areas, with proportionally more Brimsdown trips being to or from locations outside London.

(v) Lost time was the main effect resulting in reduced deliveries and lost business. Lost time and the effect of variability in travel times made dispatch scheduling particularly difficult in South Shoreditch.

(vi) The effects refer to both supplies to, and deliveries from the firm². The origins of supplies, and the length of reported delays, suggested a combination of dispatch problems at the suppliers and traffic delays on route. On-site delays (groups E and F) at other firms on multiple-drop trips would also contribute.

(vii) Many firms incurred costs, which on average were high when considered in relation to the number of commercial vehicle trips involved. Costs were :

- not associated with particular types of firm, level of commercial vehicle activity or location within the respective study area (with the exception of those firms whose location relative to the level crossings in Brimsdown placed them at a disadvantage.)
- relatively higher in South Shoreditch because a higher proportion of trips take place within the congested London area.

(viii) See also Chapter 7 for the results of the commercial vehicle survey.

1. The Enfield Lock crossing was not surveyed.

2. See Table 26 for details of delays in supplies to the firm.

TABLE 26. MANAGEMENT INTERVIEW : EFFECTS OF DELAYS, GOODS-IN
(number of firms)

	Sth. Shoreditch	Brimsgate
Frequency of delays in delivery :		
> 1/week	5	4
> 1/month	2	3
< 1/month	4	5
never	7	6
n.s.	1	1
	<u>19</u>	<u>19</u>
Usual length of delays :		
< 1 hour	1	1
< ½ day	1	3
½-1 day	6	4
1 day - 1 week	2	4
longer	0	0
n.s./n.a.	9	7
	<u>19</u>	<u>19</u>
Group D problems contributed to delays of goods-in	4	6
Operations affected by delays for goods-in	9	6
Operations affected by group D problems	4	6

3.4.2. Group E (at site). Table 27 lists managements' response to possible group E problems.

TABLE 27. MANAGEMENT INTERVIEW : COMMERCIAL VEHICLES, GROUP E PROBLEMS

(at site)

(number of firms mentioning problem)

	Sth. Shoreditch	Brimsgate
Unprompted	1	2
Prompted :		
(i) inadequate on site parking	6	5
(ii) available space affects on-site manoeuvrability	14	10
(iii) on-site height or wt. restrictions	5	1
Stated degree of seriousness of unprompted problems	extremely 1	not very 1 not at all 1
Types of unprompted problem	manoeuvring into and within site	manoeuvring into site 2
Effects of unprompted problems	lost time 1	lost time 1
Costs incurred (£ per c.v. movement)	contributes to parking costs of 4 firms (d.k. amount)	1(0.07)

Comment: (i) Group E problems were only mentioned to any degree on prompting.

(ii) Space restrictions were the main difficulties giving rise to

- lack of parking spaces
- manoeuvring difficulties.

(iii) Effects and costs were not widespread. While this might have been due in part to a lack of appreciation on the part of managements of the problems of suppliers/haulers, the response to group D problems suggested that management was well aware of commercial vehicle difficulties.

(iv) Relative to traffic conditions, on-site difficulties were seen as a relatively minor factor, except for one South Shoreditch firm which stated that on-site manoeuvring difficulties were extremely serious¹

1. There were height and width restrictions at the entrance to this firm. The loading/unloading area was shared with three other firms.

3.4.3. Group F (loading) Table 28 lists managements' response to possible group F problems.

TABLE 28. MANAGEMENT INTERVIEW : COMMERCIAL VEHICLES, GROUP F PROBLEMS

(loading/unloading)

(number of firms mentioning problem)

	Sth. Shoreditch	Brimsdown
Unprompted	2 ¹	1 ¹
Prompted		
(i) inadequate loading facilities	8	4
(ii) at least some on-street loading	15	5
(iii) available space affects loading	8	8
Frequency of delays during loading/ unloading:		
several times/day	0	2
several times/week	3	6
several times/month	4	3
less frequently	4	1
never	8	7
	—	—
	19	19
	—	—
Time restrictions imposed by the firm itself	5	9
Stated degree of seriousness of unprompted problems	fairly 1 n.s. 1	fairly 1
Effects of unprompted problems	lost time 2	lost time 1
Operations affected ²	5	2
Costs incurred (£ per c.v. movement)	1 firm (0.13)	4 firms (0.19, 3 dk)

1. Referred to the need for on-street loading.

2. Lost time and inconvenience/irritation

Comment: (i) Inadequate on-site space gave rise to

- on-street loading because facilities could not be provided within the site.
- cramped loading conditions which reduced the efficiency of the loading/unloading operation.

(ii) While recognized as a problem (particularly in South Shoreditch) inadequate loading facilities did not cause serious disruption to firms and lost time was seen more as a problem for drivers than the firm itself. This was surprising given that 40% of vehicle movements in both study areas were by firms' own vehicles (Table 54).

(iii) It was possible that on-street loading, while creating some difficulties for firms, at the same time may have suited a number of South Shoreditch firms in that it relieved them of the need to invest in on-site facilities and released part of the site for other uses (e.g. see Table 29).

(iv) Management did not relate on-street loading to problems of through movement or reduction in availability of on-street parking spaces.

(v) The effects and costs of loading difficulties did not appear serious in either study area.

(vi) Refer also to Chapter 5 (parking) and 7 (commercial vehicle survey). These suggested that management underestimated the effects of group E and F problems. If conditions at the firms which were surveyed were typical of conditions generally, then site factors would be important relative to congestion in both total travel time and variability in travel time¹.

1. Especially for multi-drop trips.

3.4.4. Other possible problems related to goods and services.

In addition to group D, E and F problems, management were asked a number of more general questions on available space, stockpiles and delivery schedules because of their possible influence on transport problems.

Table 29 summarises the response.

TABLE 29. MANAGEMENT INTERVIEW : OTHER PROBLEMS RELATED TO GOODS AND SERVICES.

(numbers of firms mentioning prompted question).

	Sth. Shoreditch	Brimsdown
Stockpiles :		
(i) levels non-optimum	10	11
(ii) extra costs incurred (£/month)	2 firms	2 firms
(iii) transport affects levels	(£2500, £3000)	(2 dk)
Available on-site space affects stockpile levels	2	4
	10	7
Deliveries from the firm :		
(i) distrib. frequency is non-optimum	2	6
(ii) extra costs incurred (£/month)	1 firm (1 dk)	4 firms (£120, £20, £40, 1 dk)
(iii) transport affects distrib. freq.	0	0
Available on-site space affects distribution schedules or freq.	4	3
Restrictions on delivery times imposed by customers	6	8
Larger or heavier vehicles would help deliveries	1	3 ¹

Comment : (i) Transport factors had little influence on stockpile levels and distribution frequency. Only one firm in each study area incurred costs as a result.

(ii) Distribution frequency was non-optimum either because of customer requirements or reliance on outside haulage.

(iii) Space restrictions affected firms in both areas.

1. In addition, one firm stated that a larger fleet of smaller vehicles would improve delivery schedules.

3.5. Problems not included within groups A to F (unprompted)¹.

3.5.1. Other traffic problems.

Five firms in South Shoreditch and two in Brimsdown commented on the general difficulties of operating in London including the combined effects of high congestion levels and inadequate parking in central London. Lost time as a consequence of these difficulties was seen as an inevitable consequence of a London location, and the effects and costs have been discussed in previous sections.

3.5.2. Internal problems.

Company policy related to the firm's production and transport activities resulted in problems for three firms. Reliance on outside haulage at two firms reduced their control over supply and delivery schedules and made forward planning difficult for their transport departments. Management of the third firm (in Brimsdown) considered that vehicle fleet policy was not well suited to the type of goods carried and that larger vehicles would reduce driver fatigue and vehicle wear and tear².

3.5.3. Other problems.

Table 30 lists all other transport related problems which were mentioned by management.

1. Refer to Table 10 for response rates.
2. Management estimated a cost penalty of £800/month.

TABLE 30. MANAGEMENT INTERVIEW : OTHER PROBLEMS (unprompted)

	description	effect	cost
South Shoreditch (3 firms)	High veh.operating costs	n.s.	n.s.
	Vehicle reliability and breakdown	extra vehicle hire required	£50/month
	Vehicle breakdown, servicing & repairs.	extra vehicle kept as standby	£700/month
Brimsdown (5 firms)	(i) High haulage rates (ii) Vehicle servicing and repairs	(i) no effect (ii) reduced delivery frequency and use of outside haulage	(i) n.s. (ii) £100/month
	Industrial disputes/fuel shortages	only occasional problem	n.s.
	(i) Vehicle servicing and repair (ii) Admin.requirements of vehicle fleet (iii) Vandalism at site	(i) extra vehicle hire required (ii) time of office staff (iii) Vehs. pkd. under cover, therefore stockpile area reduced	(i) £300/month (ii) n.s. (iii) £200/month
	Proposed reduction in legal driving hours	n.s.	n.s.
	Lack of local facilities	recruitment difficulties	d.k.

3.5.4. Comment: (i) Taken over all firms, the response rates of Table 10 suggested that internal and other problems were much less important to firms than problems associated with person and commercial vehicle trips (groups A to F).

(ii) In spite of this, a relatively few firms in both areas incurred considerable cost as a result of these problems.

(iii) Problems were for the most part those of administering and operating a fleet of commercial vehicles, or the difficulties of relying on outside haulage. These problems were independent of firms' activity or location.

(iv) Since there was no subsequent prompting on these issues, there was the possibility that as a group the reporting of these problems may have been underrepresented.

3.6. Comparison of group A to F problems.

Table 31 compares the extent and severity of problems by user category and study area. The table should be interpreted with some caution. Many of the problems and their response rates are not directly comparable and the number of prompted questions asked about a particular problem group may have given undue emphasis to certain problems. Costs may be incurred by the firm in spite of the fact that management considered that operations were not affected. Similarly management may consider that the effect of a problem such as time lost through late arrival may not affect operations or result in identifiable costs. Costs will also be incurred by those firms suffering absenteeism, turnover and recruitment difficulties where part of the difficulty was attributable to transport factors.

The most important problems in terms of response rates were :

	South Shoreditch	Brimsdown
Unprompted	*A-journey to wk. *A-business trips *C-journey to wk. *D-comm. vehs.	*A-journey to wk. *C-journey to wk. *D-comm. vehs.
Additional problems mentioned after prompting	A-visitors *B-employees *B-business and visitors (?) *E-com.vehs.at site F-loading/unldg.	*A-business A-visitor B-business and visitors (?) *C-personal trips E-com.vehs. at site *F-loading/unldg.

* indicates costs were incurred by 3 or more firms in respective study area.

TABLE 31. MANAGEMENT INTERVIEW : COMPARISON OF PROBLEMS

(Numbers of firms; total sample South Shoreditch 19, Brimsdown 19 firms)

Type of Problem	Response Rate				Operations affected		Costs incurred	
	Sth. Shoreditch		Brimdown		S.S'dtch. B'down	S.S'dtch. B'down	S.S'dtch. B'down	B'down
	Unprompted	Prompted	Unprompted	Prompted				
<u>Group A</u> person trips, on-route to site)								
(i) employee journey to wk.	4	9	12	7	4	2	6 ¹	8 ¹
(ii) business trips	4	9	0	9	7	6	8	4
(iii) visitor trips	0	13	0	15	5	2	2	1
(iv) personal trips	0	2	0	2	0	0	7 ²	6 ²
<u>Group B</u> (parking)								
(i) employee journey to wk.	1	9	1	8	0 ⁵	0 ⁵	3 ⁵	3 ⁵
(ii) business trips	0	6	1	3	4 ⁵	2 ⁵	4 ⁵	2 ⁵
(iii) visitor trips	0	6	1	3	2	0	1	1
(iv) personal trips	0	0	0	0	0	0	0	0
<u>Group C</u> (public transport)								
(i) employee journey to wk.	7	9	10	8	4	4	4 ¹	11 ¹
(ii) business trips	1	0	0	0	1	0	0	0
(iii) visitor trips	0	0	0	0	0	0	0	0
(iv) personal trips	0	4	0	8	0	0	7 ²	6 ²
<u>Group D</u> (commercial vehicles on-route to site)								
(i) congestion/delays	13	1	12	4	(10	(12	12 ³	13 ³
(ii) indirect routing	1	3	0	6	((3	3
(iii) poor road surfaces	0	8	0	3	0	0	4	2
(iv) ht/wt restrictions	0	1	0	2	0	0	0	0
<u>Group E</u> (commercial vehs. on-site)								
(i) inadequate on-site parking	0	6	0	5	0	0	4	0
(ii) space affects manoeuvrability	1	14	2	10	1	1	0	1
(iii) on-site ht/wt restrictions	0	5	0	1	0	0	0	0
<u>Group F</u> (loading/unloading)								
(i) inadequate facilities	0	8	0	4))))
(ii) on-street loading	2	15	1	5))	1 ⁴	1 ⁴
(iii) avail. space affects ldg	0	8	0	8))))
(iv) delays dur. ldg/unldg.	0	11	0	12))))
(v) time restrictions ⁵	0	5	0	9))	0	0

see page 59 for footnotes

Footnotes to Table 31.

1. In addition, 12 firms in South Shoreditch and 18 in Brimsdown stated that transport difficulties resulted in time lost through late arrival without specifying to which mode this referred.
2. Refers to paid time lost through difficulties with personal trips without specifying to which mode this referred.
3. Refers to costs incurred through the effect of lost time.
4. Refers to costs incurred through the effects of lost time.
5. Including effect of parking difficulties at trip destination. (mentioned prompted by 6 firms in South Shoreditch and 2 in Brimsdown).
6. Imposed by the firms themselves. Restrictions imposed by customers affected 6 South Shoreditch and 8 Brimsdown firms.

4. PARKING

4.1 Background

4.1.1 South Shoreditch The study area lies mainly within the Inner London Parking Area and most of the area from which firms were sampled is covered by the Shoreditch Controlled Parking Zone with legal on-street parking for non-residents being met by metered spaces. On-Street conditions within 100 yards of each of the firms are shown below:

meters, yellow line and unrestricted	1 firm
meters and yellow line	9 firms
yellow line and unrestricted	1 firm
yellow line only	8 firms
	<hr/>
	19 firms
	<hr/>

The average number of meters available per firm for the ten firms which had metered spaces within 100 yards was 5.1.

There are five public off-street car parks within the study area with a total capacity of 426. There is also a large public car park adjacent to the south-western boundary at Finsbury Square and a multi-storey car park at Great Eastern Street/Curtain Road, with capacity for 125 cars, is no longer available for public parking. Three of the car parks are on temporary sites and are threatened with redevelopment. This would result in the loss of 60% of existing capacity. There are no vacant off-street sites available for free parking on an ad-hoc basis. A lorry park associated with the car park in Shoreditch High Street has capacity for over 100 vehicles.

On-site parking is severely restricted at many firms. Of the firms sampled, two had no spaces at all, and five others in multi-occupied premises shared spaces with other firms.

4.1.2 Brimsdown The study area is in a non-controlled area and parking is unrestricted except for single yellow lines in parts of Mollison Avenue/Bilton Way, Stockingswater Lane, Millmarsh Lane, and Queensway. Five firms in the sample had yellow line restrictions within 100 yards of their sites. There are two public off-street car parks in Jeffries Road and Green Street. The Jeffries Road site

has a lorry park associated with it, and there is a paved area in the Ponders End Industrial Estate available for free parking on an ad-hoc basis. All firms provided at least some on-site parking, although only limited spaces were available at several large firms in sub-area D (west of the rail line).

4.2 On-site parking

4.2.1 On-site parking provision Figures 5 and 6 show the provision of on-site spaces per employee. On average, there were 0.33 spaces per employee in South Shoreditch and 0.47 in Brimsdown.¹ While this suggested that parking provision was relatively better in Brimsdown, account should be taken of the following factors:

- i) The weighted average of spaces per employee was 0.30 in South Shoreditch and 0.26 in Brimsdown.² This resulted from two firms in Brimsdown employing 1004 persons yet providing only 72 spaces.³ These firms also had adjacent yellow line restrictions and hence there were serious implications in terms of demand for available on-street spaces.
- ii) Seven South Shoreditch firms provided five or less spaces, and for two of these firms the spaces were shared with other firms.⁴ There were no firms with five or less spaces in Brimsdown.
- iii) The percentage of employees travelling to work by private transport in South Shoreditch and Brimsdown was 32.6% and 61.9% respectively, of whom 29.3% and 49.0% were drivers. There was, therefore, a reasonable balance in both study areas,⁵ however once allowance was made for at least a minimum of visitor parking the situation at several South Shoreditch firms became acute. (See (ii) above.)

... ..

1. Unweighted mean of spaces/employee at each firm.
2. Total no. of spaces/total employment of all firms.
3. Firms 47 and 58 in sub-area D.
4. Since during sampling in South Shoreditch only one firm in a multi-occupied building was selected, there is the possibility that lack of provision of on-site spaces has been under-estimated. Of 60 firms in sub-area B replying to a questionnaire from L.B. Hackney, only 10% stated that they had any off-street parking facilities on their premises. (10).
5. L.B. Hackney pursues complementary policies of improving public transport and discouraging commuting by car.

Fig. 5. On-Site Parking Provision.

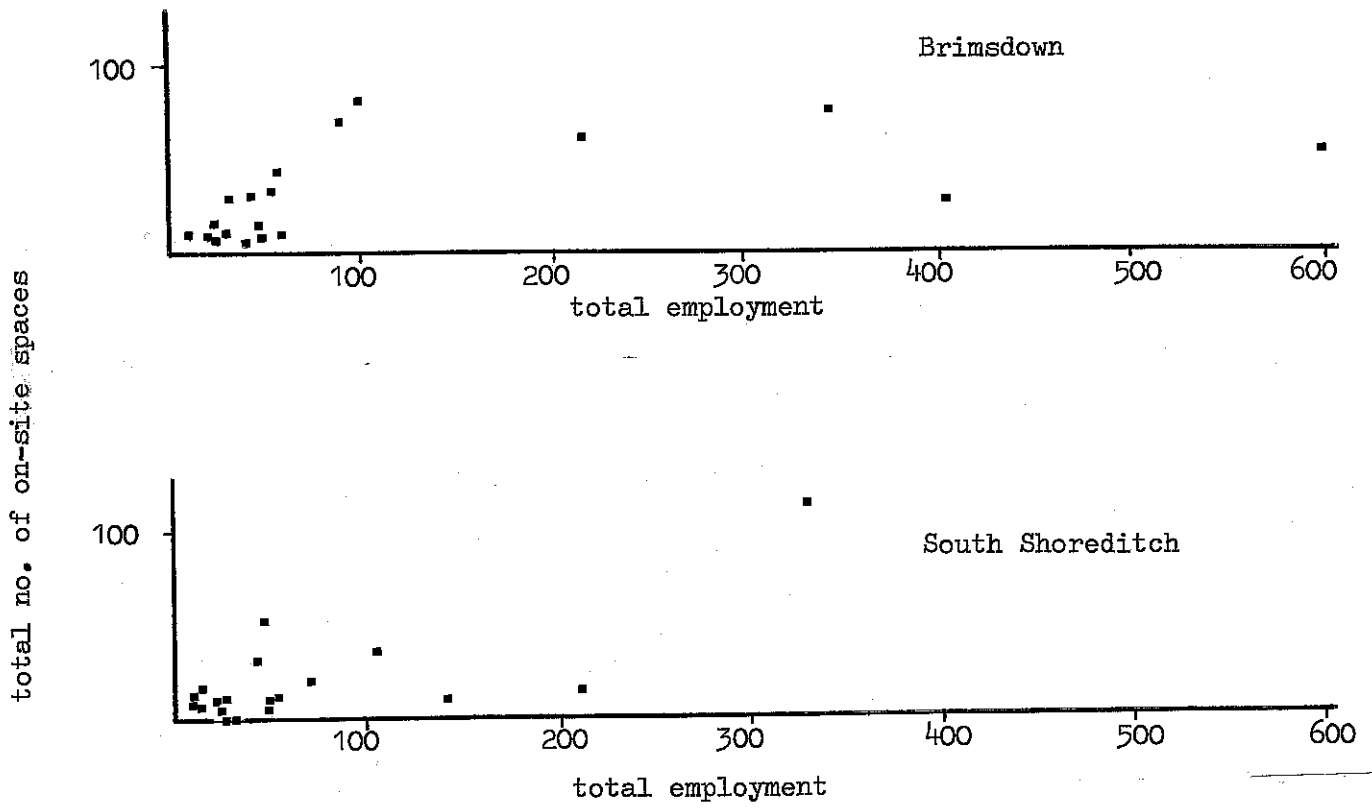
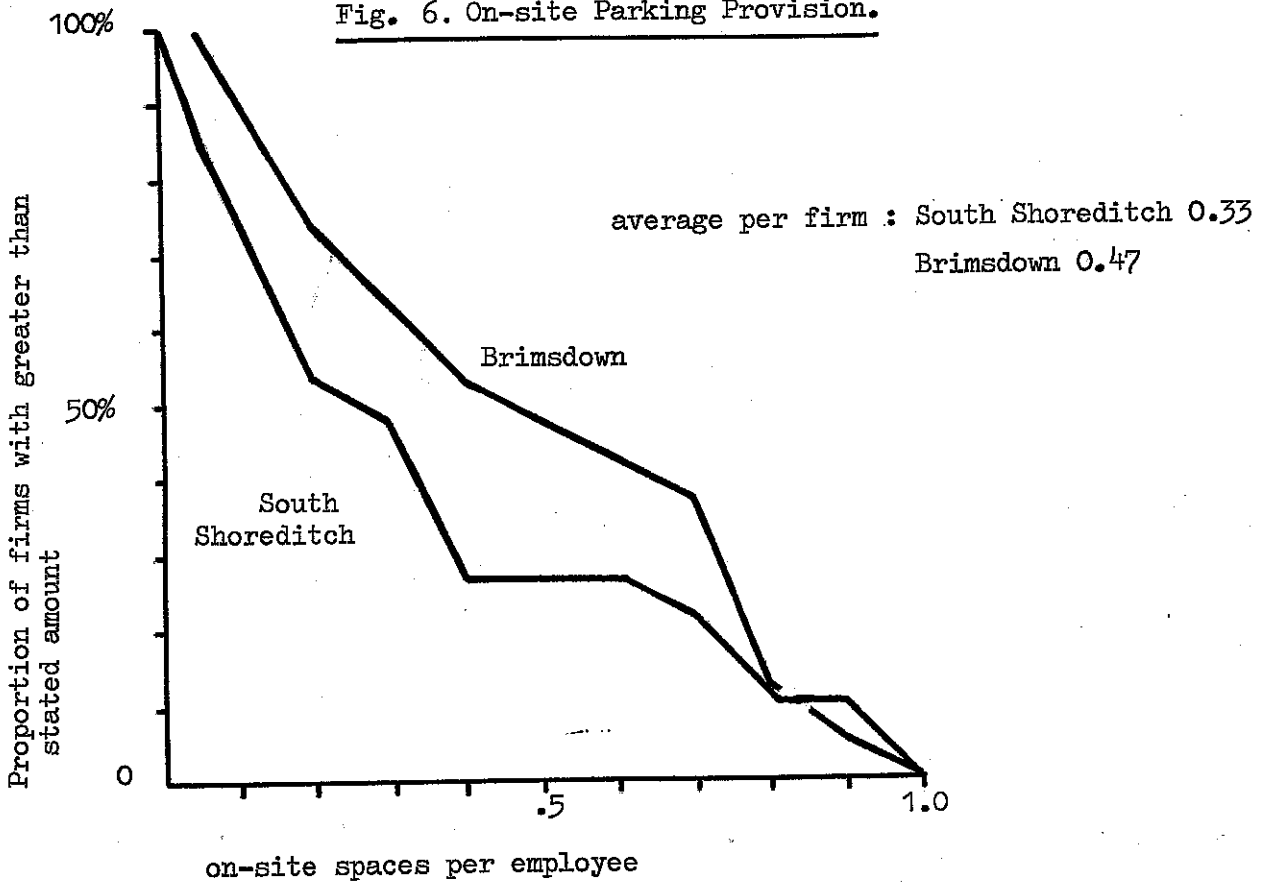


Fig. 6. On-site Parking Provision.



iv) From Fig. 5, spaces per employee appeared to be independent of size of firm with the exception of the larger Brimsdown firms. Using the values in Fig. 5 to calculate the least squares straight line of best fit gave:

	<u>South Shoreditch</u>	<u>Brimsdown</u>
All firms:	$S = 0.23E + 0.84$ ($R^2 = 0.56$)	$S = 0.07E + 22.59$ ($R^2 = 0.20$)
Firms employing less than 200:	$S = 0.11E + 6.70$ ($R^2 = -0.08$)	$S = 0.75E - 8.45$ ($R^2 = 0.79$)

(where S = total no. of on-site spaces provided; E = total employment)

It is likely that a more realistic relationship allows for a certain minimum level of provision of on-site parking, even for very small firms, and that firms which provided no employee parking nevertheless attempted to provide at least some spaces for visitors.

4.2.2 Survey results Figure 7 shows the availability of on-site spaces by time of day. Surprisingly there was little difference between study areas and on average about 35% of a firm's on-site spaces were vacant during business hours.¹ This was due to the lower proportion of employees who parked on-site in South Shoreditch, 57.4%, (c.f. 76.3% in Brimsdown) where spaces were reserved for visitors and goods vehicles at the expense of employee parking. In spite of this apparent availability, only 46.2% of South horeditch visitors parked on-site (compared with 69.2% in Brimsdown, where a considerable amount of on-street parking was for convenience rather than necessity). It appeared that in South Shoreditch visitors were not using available spaces for the following reasons:

- i) difficulty finding or identifying visitor parking spaces and areas;
- ii) vacant spaces may in fact have been reserved for the firm's vehicles (or at least may appear so to visitors);
- iii) many calls were of short duration and it may have been more convenient to park on-street.

... ..

1. Study area unweighted averages may conceal large differences between individual firms. In fact on-site parking was at a capacity at 9 South Shoreditch and 3 Brimsdown firms for at least part of the day (but not necessarily at the same time or for the same period) - see Table 32.

Fig. 7. Proportion of on-site spaces vacant by time of day.

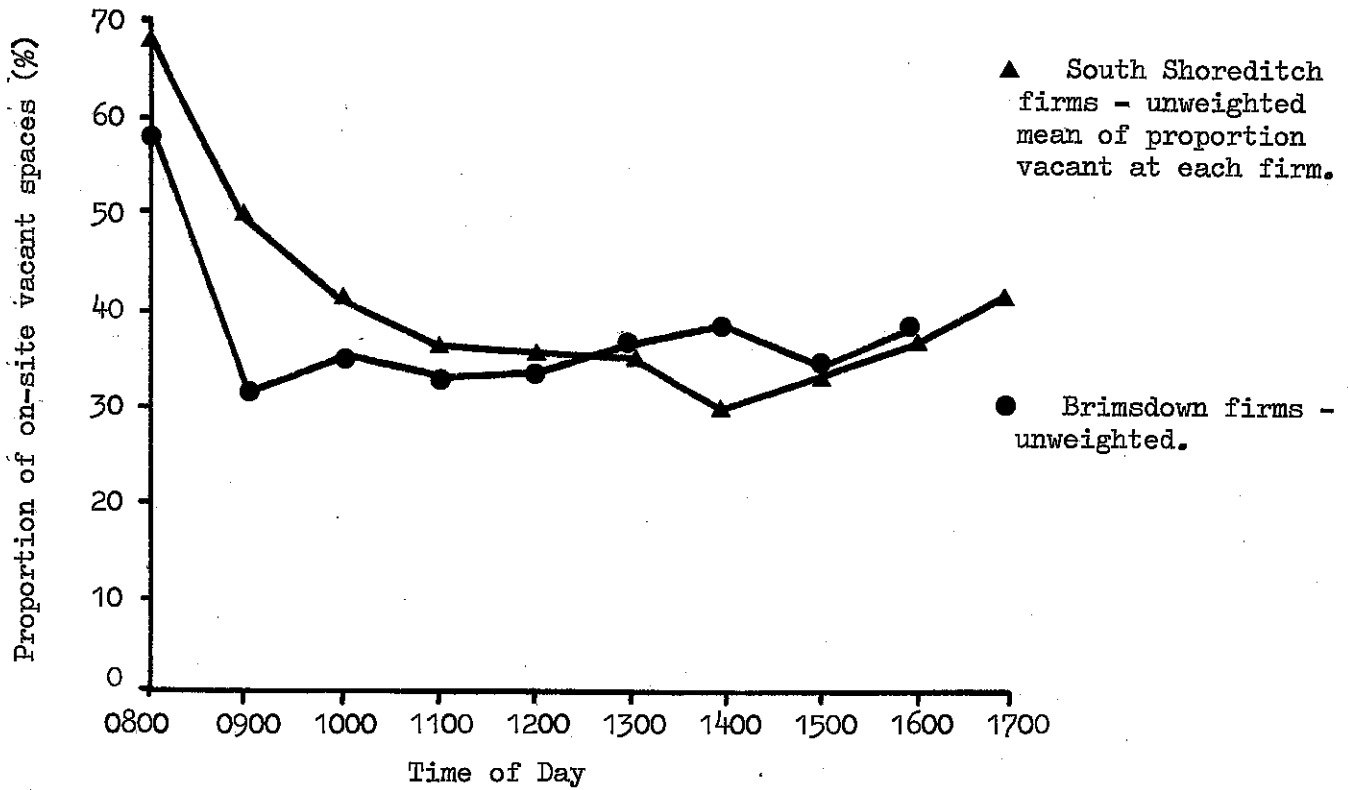
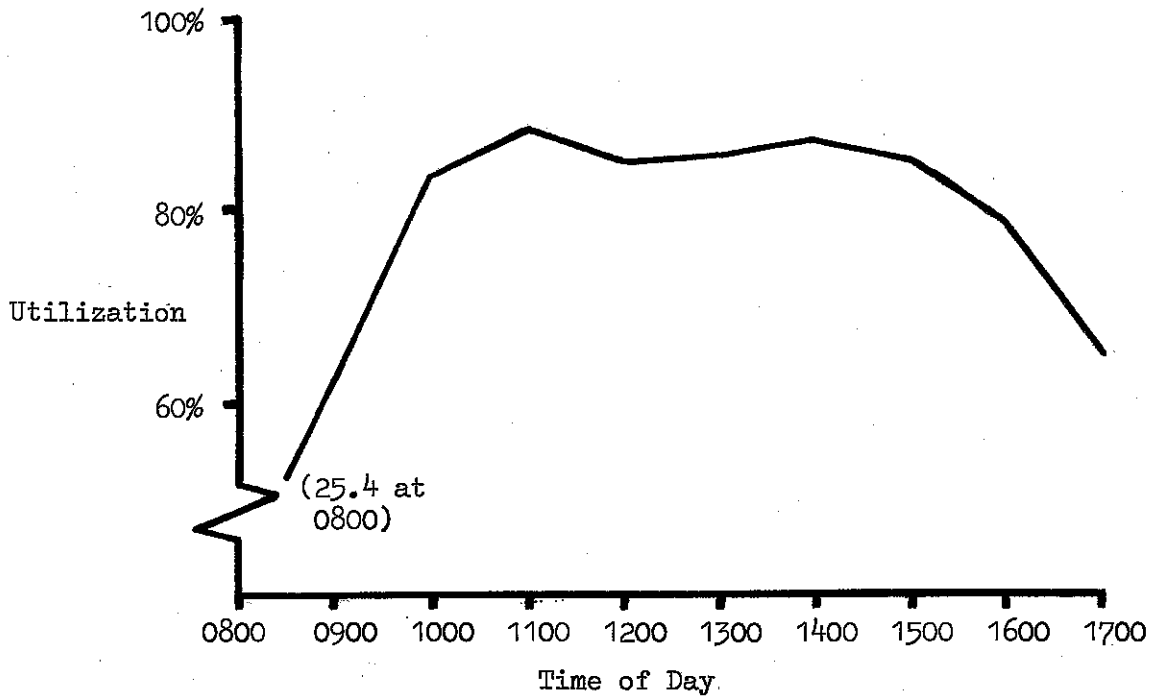


Fig. 8. South Shoreditch : Average Utilization of Public
Off-Street Car Parks.

(unweighted average of five car parks)



If the conditions during the day at individual firms are considered, it is clear from Table 32 that the inner area was relatively worse off than the outer area in the availability of on-site spaces. Almost half the South Shoreditch firms had no on-site spaces available for at least part of the day, and for a further one-third availability was severely restricted. The study area averages of Fig. 7 concealed a situation of restricted availability at many individual firms.

Table 32. ON-SITE PARKING AVAILABILITY

	South Shoreditch	Brimsdown
Number of on-site spaces available:		
i) More than 10 at all times	3	7
ii) Between 6 and 10 at all times	1	5
iii) Between 1 and 5 at all times	6	4
iv) At capacity at least part of the day	9	3
Total	19 firms	19 firms

4.3 Off-street public parking

Figure 8 shows the average utilisation of the five South Shoreditch car parks within the study area.¹ All were at three-quarter capacity or more between 10.00 and 15.00. In addition to a high degree of utilisation, there was a large proportion of all-day or long-stay contract parking² and multiple use by certain vehicles throughout the day so that spaces were seldom available to meet the short and medium term requirements of local firms and visitors. Hence under their existing pricing³ and management policies, off-street public parking in South Shoreditch:

... ..

1. There were no surveys of public off-street parking in Brimsdown.
2. For four car parks surveyed by L.B. Hackney (10), the duration of stay of vehicles was:
 - 8 hours or more - 48.8%
 - 6 hours or more - 67.0%
 - 4 hours or less - 24.3%
 - 2 hours or less - 12.5%
 - 1 hour or less - 5.0%
3. A twin tariff operated at one car park did not appear to significantly influence the amount of short term parking. (10)

- i) eased employee parking in some firms;¹
- ii) eased parking problems for some firms' own vehicles;
- iii) did little to ease the short-stay parking problems of visitors and firms (except to the extent that they may release some on-site spaces and reduce the demand for on-street parking);
- iv) may be used for commuter parking by people living and employed outside the study area (especially the Finsbury Square park).

In contrast to the car parks, utilisation of the Shoreditch High Street lorry park was low during the day (about 4 to 6%), but increased to around 20% for overnight parking.

4.4 On-street parking

4.4.1 General characteristics (South Shoreditch)

- i) Meters were at or near capacity all day, and in the Shoreditch Improvement Area there was an average occupancy of greater than 90%. Meters accounted for less than half the total on-street parking, in most cases the remainder of cars being illegally parked on yellow lines.^{2,3}
- ii) Approximately 40% of all yellow line parking in sub-area B was by commercial vehicles. (10)
- iii) Most on-street parking was for less than 30 minutes and there was little difference in duration of stay for cars and goods vehicles which parked on yellow lines. (Fig. 9) In spite of this, 32% of South Shoreditch employees who drove to work stated that they parked on-street.

-
- 1. 8.0% of South Shoreditch employees who drove to work parked in off-street car parks - see Table 43 .
 - 2. Sub-area A: Of all vehicles which parked during a survey day, 18% parked in metered spaces and 47.5% on yellow lines (the remainder in residents permit space, all day spaces, or unrestricted areas). (11)
 - 3. Sub-area B: At any time of the day approx. 25 - 30% of all vehicles parked on-street were parked at metered spaces. The remainder were parked on yellow lines. (10)

Fig. 9. South Shoreditch : Parking Duration.

(Wenlock Area and Willow Street - representative of sub-areas A and B respectively)

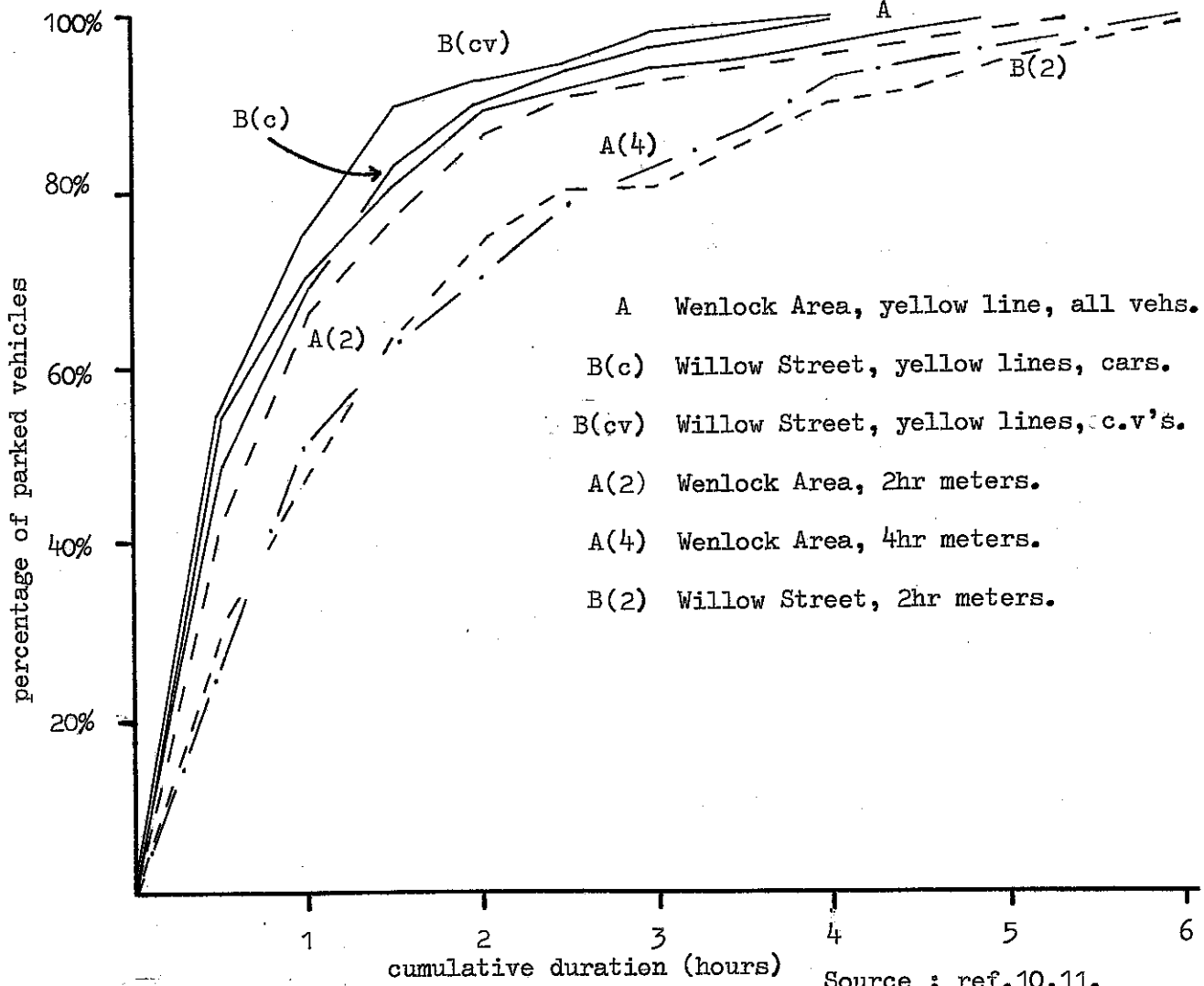
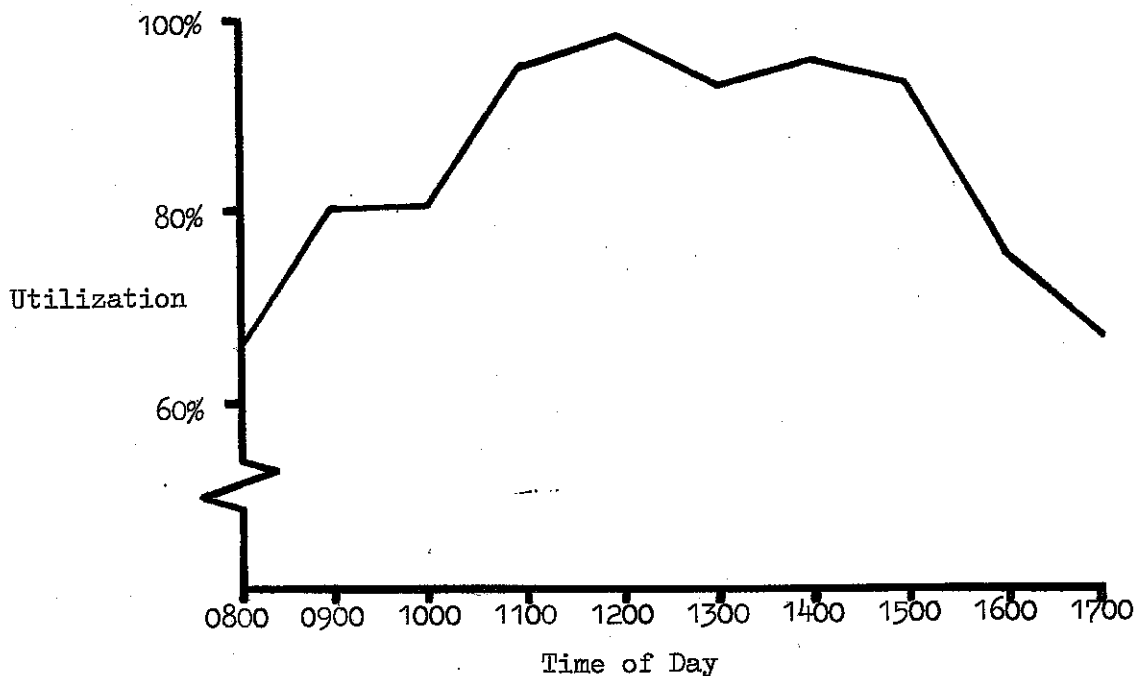


Fig. 10 South Shoreditch : Utilization of Meter Spaces.

(weighted average for those firms with meters available within 100 yds of site)



4.4.2 Details of firms surveyed

- i) Meter parking (South Shoreditch only): Of the 17 firms which were surveyed,¹ eight had metered spaces within 100 yards of their site. Figure 10 shows that they were at, or near, capacity most of the day. Meters adjacent to seven firms were at capacity for at least four hours and the average period of 100% utilisation (taking all eight firms) was 6.0 hours.
- ii) Yellow line parking: All 17 South Shoreditch firms had yellow lines within 100 yards of their sites. Utilisation varied during the day, and maximum utilisation during the day at each firm varied from 10.0% to 100%, with an average for the 17 firms of 51.8%. At only one firm was yellow line parking at capacity at least once during the day. By contrast, of the 19 firms surveyed in Brimsdown,² five had yellow lines within 100 yards. The maximum utilisation during the day varied from 0% to 37.5%, with an average for the five firms of 19.6%.
- iii) Unrestricted parking: Two South Shoreditch firms had adjacent unrestricted parking, with maximum utilisation of 76.9% and 75.0%. All firms in Brimsdown had unrestricted parking available. Available spaces were at capacity for part of the day at three firms³ (all of which also had adjacent yellow lines), and the average maximum utilisation of the 19 firms which were surveyed was 45.3%.
- iv) Details of the maximum utilisation at the individual firms are contained in Appendix V.

4.5 Comparison with other survey results

i) Management interview

On-site provision	South Shoreditch	Brimsdown
No. of firms stating a shortfall in at least one category	13	10
of which		
i) Shortfall observed during parking survey	9	3
ii) Available spaces close to capacity during parking survey (>80% utilisation)	1	5
iii) Shortfall not observed	3	2
Management not stating shortfall yet available spaces close to capacity	3	3
Management not stating shortfall, shortfall not observed during surveys	3	6
Total	19	19 ⁴

- 1. The on-street parking survey was not carried out at two firms (nos. 34 & 44)
- 2. The on-street parking survey was not carried out at firm 54.
- 3. Two of these were large firms in sub-area D.
- 4. There was no on-site survey at firm no. 54.

When account is taken of the daily variations in parking demand it appeared that managements' assessment of parking conditions was reliable, although in both study areas there were three firms where on-site parking was at, or near, capacity and management which state a shortfall when prompted in the management interview. The unprompted response to possible parking problems was low, and when prompted, two South Shoreditch and no Brimsdown firms stated that parking difficulties for visitors affected the firm. In view of the results of the parking survey and visitor questionnaire, the management of South Shoreditch firms may have under-estimated the adverse effects of parking conditions.

ii) Employee questionnaire

Stated parking location and walk distance agree with the results of the surveys and reinforce the difficulties in South Shoreditch. One-third of drivers in South Shoreditch park on-street and reduce the availability of short-term parking spaces. Somewhat surprisingly, only 17.1% and 14.8% mentioned availability and cost as prompted problems, and 10.6% stated that time was spent looking for parking. Parking was not the main reason for not using a car if one was available for the journey to work (stated as a reason by 10.6% of respondents who chose an alternative mode even though a car was available).

iii) Visitor questionnaire

Unprompted response rates were low in both areas, although when prompted 50% of drivers to South Shoreditch stated parking availability to be a problem (compared with 19.8% in Brimsdown). Half the visitors to South Shoreditch park on-street,¹ although only one-quarter of these stated that they paid for parking and cost was not an important problem.

... ..

1. Unweighted mean of proportion of visitors parking on-street at each firm = 66.7%

4.6 Some conclusions

Table 33 summarises the results of the parking survey and highlights the differences between study areas.

The major conclusions from the survey were:

- i) As regards provision and utilisation of both on-site and on-street parking, South Shoreditch experienced considerable difficulties and was relatively worse off than Brimsdown.
- ii) There were individual firms in both areas with very low levels of on-site provision. Where these were large firms, long-stay employee parking reduced the availability of short-term on-street spaces. Difficulties were exacerbated in specific locations where there were narrow streets or restrictions which limited the amount of legal on-street parking available.
- iii) In theory, the overall on-site provision in both areas was adequate for the existing mode split of the journey to work. Because of the number of employees parking on-street, and the average availability of on-site spaces during the day, a large proportion of spaces in South Shoreditch must not be available for employee parking. At some firms spaces were reserved for visitors or firm's vehicles.
- iv) In spite of an apparent availability of on-site spaces during the day, half of all visitors to South Shoreditch parked on street. This suggested that:
 - spaces were in fact not available (either reserved or blocked by equipment, goods vehicles etc.);
 - spaces were not being used efficiently;
 - visitors had difficulty finding or identifying parking areas; or
 - in some cases on-street parking was more convenient for short-term callers;and that there was some scope for the firms themselves to improve the short-term usage of on-site spaces. Further examination of on-site conditions and utilisation by type of user would be fruitful.
- v) Public off-street parking in South Shoreditch did little to meet the requirement for short-term parking.
- vi) Because of the high utilisation of meter spaces and the demand for short-term parking, most on-street car parking in South Shoreditch was (illegal) yellow line parking. Almost half of all vehicles parked on-street in the inner area were goods vehicles. By contrast, on-street parking in Brimsdown was largely unrestricted.

vii) The other surveys at the firms suggested that on-street parking had a considerable effect on delays to through movement in South Shoreditch.¹

viii) Although they recognised the problem, there was some evidence that management in South Shoreditch under-estimated the effects of inadequate short-term parking.

1. See response by visitors and commercial vehicle drivers to the prompted question "delays by parked and loading vehicles", Table 51 p. 103 and Table 56, p. 110.

Table 33. PARKING SURVEY: SUMMARY

South Shoreditch	Brimsdown
<p><u>Provision:</u></p> <ul style="list-style-type: none"> i) Low level of on-site provision (spaces often shared with other firms) ii) A limited number of metered spaces at 10 firms iii) Yellow line restrictions at all firms iv) Unrestricted on-street spaces at 2 firms v) Some off-street public car parks 	<ul style="list-style-type: none"> i) Relatively higher level of on-site provision (2 large firms with very few spaces) ii) No metered spaces iii) Yellow line restrictions at 5 firms iv) Unrestricted on-street spaces at all firms v) Little off-street public parking
<p><u>Parking characteristics:</u></p> <ul style="list-style-type: none"> i) High level of on-street employee parking (32% of those who drove park on-street), with long walk distance ii) Most on-street visitor parking was short-term; 52% of visitors park on-street iii) High proportion of all on-street parking was by goods vehicles 	<ul style="list-style-type: none"> i) Low level of on-street employee parking (14% of those who drove park on-street) with short walk distance ii) Most on-street visitor parking was short-term; 28% of visitors park on-street
<p><u>Utilisation:</u></p> <ul style="list-style-type: none"> i) Average of 1/3 of on-site spaces vacant during day, however ii) On-site parking was at capacity at least part of the day at 9 firms iii) Meters at capacity for most of the day iv) High proportion ($> \frac{1}{2}$) of on-street parking was on yellow lines v) Off-street public car parks at or near capacity and used by long-term contract parking 	<ul style="list-style-type: none"> i) Average of 1/3 of on-site spaces vacant during day ii) On-site parking was at capacity at 3 firms iii) Low degree of utilisation of yellow lines iv) On-street unrestricted parking at capacity at three firms - elsewhere low degree of utilisation
<p><u>Effects:</u></p> <ul style="list-style-type: none"> i) Management recognised problem of short-term parking but under-estimated effect on firms ii) Employees who drove to work did not see parking as a serious problem, but their on-street parking affected availability of short-term spaces iii) Effect of parking on through movement 	<ul style="list-style-type: none"> i) Management recognised problem of on-site shortfall ii) Effects of any parking difficulties in Brimsdown were not serious except for large firms in sub-area D

5. EMPLOYEE QUESTIONNAIRE

5.1. Interpretation and background.

5.1.1. Interpretation. Self completion questionnaires were distributed to employees of the firms which participated in the study. Samples of 100% were attempted and the response is discussed in Section 2.5.2. and Appendix III. The questionnaires provided background information on journeys to and from work, and any business and personal trips made during the day, together with respondents' perceptions of, and attitude towards, problems associated with these trips. Respondents were first given the opportunity to list unprompted problems and were then asked to rate the degree of seriousness of possible prompted problems on a four point scale.¹

A total of 597 and 500 completed questionnaires were obtained from South Shoreditch and Brimsdown, representing 47.1% and 24.4% of the total employment of the firms which were surveyed, and about a 1 in 20 sample of total study area employment in the relevant SIC's of both areas. Response rates and the representativeness of the samples are discussed in Appendix III, where it is shown that works/production employees (especially females) were somewhat underrepresented in both samples.

Because distribution and collection of questionnaires was by the firms themselves, day of completion was not closely controlled but as shown below it appears that different days were adequately represented.

Day of completion of EQ	South Shoreditch	Brimsdown
Mon	27.8	19.5
Tues	18.4	20.8
Wed	31.7	27.7
Thurs	8.8	18.0
Fri	13.3	14.0
Total	100%	100%

The method of presentation follows the format used in the management interview chapter. The remainder of this section gives data on trip characteristics and Sections 5.2, 5.3 and 5.4 discuss the problems mentioned in relation to journey to work, business trips, and personal trips respectively. Each section treats group A, B and C type problems sequentially. Results have been presented as aggregates of responses from all firms in each study area.

1. Reference 12 contains a listing of the data which have been retained on computer file.

5.1.2. Background : journey to work¹

- (i) Mode split. Tables 34 and 35 show mode split for the journey to work. Differences in mode split which may influence the interpretation of the employee questionnaire, management interview and parking survey include :
- high usage of public transport in South Shoreditch, and private modes in Brimsdown.
 - importance of rail in South Shoreditch and bus in Brimsdown as the predominant public transport modes.
 - low proportion of South Shoreditch employees travelling as car/van passengers (especially males).
 - the relatively small number of employees in South Shoreditch who walked, or travelled by "other" modes.
- (ii) Car availability. Table 36 lists the responses to the question "was a car available for the journey to work?" and Table 37 gives the stated reasons for not using a car if one was available. Traffic conditions and to a lesser extent cost of driving were the main reasons for not using a car in South Shoreditch. A further disadvantage of car use there was difficulty parking. One-quarter of those responding saw positive advantages in public transport (viz. speed and convenience of rail and underground). Of the Brimsdown employees who had a car available but did not use it, one-third thought that other modes were faster, just over one-quarter were concerned with traffic conditions and cost and one in eight left the car at home for use by others.
- (iii) Travel time. Table 38 lists the stated travel time to and from work by mode and indicates:
- little difference in travel time by mode in South Shoreditch, except for rail and walk, presumably because of the distances involved.
 - the relatively long public transport travel time compared with all other modes in Brimsdown.
 - the relatively shorter travel times of private, walk and other modes in Brimsdown compared with South Shoreditch.
 - almost identical bus travel times to inner and outer areas, whereas rail trips to Brimsdown were considerably shorter than those to South Shoreditch.

1. Refer to Appendix III for tabulation of the characteristics of the workforce.

TABLE 34 EMPLOYEE QUESTIONNAIRE : MODE SPLIT (SOUTH SHOREDITCH)

SOUTH SHOREDITCH

	managerial/ professional	office (clerical/ technical)	works/ production	male	female	Total
private	43.8	20.8	38.2	39.7 ³	15.6 ⁴	32.7 ^{2,5}
public	48.2	71.7	45.2	51.8	67.1	56.0
walk	4.4	5.8	13.5	5.2	16.2	8.4
other ⁶	3.6	1.8	3.0	3.3	1.2	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0%
Public transport modes:-						
bus	5.1	19.0	20.0	10.6	30.1	16.2
rail	33.6	37.6	17.4	30.5	24.9	28.8
u/ground	9.5	15.0	7.8	10.6	12.1	11.0
Total	48.2	71.7	45.2	51.8	67.1	56.0%

1. No significant difference in mode split to and from work.
2. 90.3% car/van driver; 9.7% car/van passenger.
3. 97.0% car/van driver; 3.0% car/van passenger.
4. 48.1% car/van driver; 51.9% car/van passenger.
5. 33.3% of those using private mode travelled in a company car.

(The figures in footnotes 2 and 5 have not been weighted to account for differences in response rates between different categories of employees).

6. including taxi, motorcycle and bicycle.

TABLE 35 EMPLOYEE QUESTIONNAIRE : MODE SPLIT (BRIMSDOWN)

BRIMSDOWN

	managerial/ professional	office clerical/ technical	works/ production	Male	Female	Total ¹
private	89.5	47.3	60.1	67.1 ³	46.4 ⁴	61.9 ^{2,5}
public	3.2	26.7	13.9	11.6	28.0	15.7
walk	3.2	16.0	9.2	8.1	17.6	10.5
other ⁶	4.2	10.0	15.9	13.2	8.0	11.9
Total	100.0	100.0	100.0	100.0	100.0	100.0%
Public transport modes:-						
bus	2.1	20.0	11.9	8.9	22.4	12.3
rail	1.1	6.0	1.2	1.9	5.6	2.8
u/ground	0.0	0.7	0.8	0.8	0.0	0.6
Total	3.2	26.7	13.9	11.6	28.0	15.7%

1. No significant difference in mode split to and from work.
2. 79.2% car/van driver; 20.8% car/van passenger.
3. 84.3% car/van driver; 15.7% car/van passenger.
4. 56.9% car/van driver; 43.1% car/van passenger.
5. 31% of those using private mode travelled by company car.

(The figures in footnotes 2 and 5 have not been weighted to account for differences in response rates between different categories of employees).

6. Including taxi, motorcycle and bicycle.

TABLE 36. EMPLOYEE QUESTIONNAIRE : CAR AVAILABILITY
 (% of respondents who answered this question)

	South Shoreditch		Brimsdown	
	car avail.	car not avail.	car avail.	car not avail.
mode of journey to work :				
private :	96.8	3.2 ¹	90.2	9.8 ¹
bus	0	100.0	9.8	90.2
rail	38.9	61.1	7.1	92.9
u/ground	30.4	69.6	0	100.0
walk	3.3	96.7	13.9	86.1
other	35.7	64.3	25.0	75.0
Total	51.5	48.5	64.8	35.2

1. Travelled as car/van passenger.

TABLE 37. EMPLOYEE QUESTIONNAIRE : REASONS FOR NOT USING CAR
 (% of respondents who stated a car available but did not use it).

	South Shoreditch	Brimsdown
Faster by other modes	9.5	33.3
Traffic conditions	32.4	8.3
Home-work dist. too short for car	0	12.5
More convenient by other modes	12.2	0
Cost of private transport	21.6	20.8
Difficulty parking	12.2	0
Car left for use by others	1.4	12.5
Other ¹	10.8	12.5
	100%	100%

1. Mainly walk because of health and exercise.

TABLE 38. EMPLOYEE QUESTIONNAIRE : MEAN STATED TRAVEL TIMES (MINS.)

	South Shoreditch		Brimsdown	
	to work	from work	to work	from work
private	43.4 (25.7)	44.3 (23.1)	25.9 (18.4)	27.8 (19.3)
public (all modes)	58.3 (26.7)	59.1 (26.0)	46.4 (21.0)	48.2 (26.0)
bus	42.6 (21.5)	42.0 (22.3)	44.8 (20.5)	46.1 (26.8)
rail	70.2 (26.9)	71.4 (24.2)	48.3 (21.5)	52.1 (22.7)
u/ground	49.8 (16.2)	51.0 (17.9)	70.0 (17.3)	70.0 (17.3)
walk	15.5 (8.3)	15.6 (8.6)	19.5 (12.4)	18.6 (12.1)
other	37.0 (18.5)	41.1 (31.8)	18.4 (10.0)	20.0 (12.5)

(numbers in brackets are standard deviations)

(iv) Home locations. Home locations for all employees of each study area are plotted in Figure 11, and Figures 12 and 13 show home location by mode of journey to work¹.

South Shoreditch

- home locations concentrated to north and east of study area, however only 34.7% of employees lived within L.B. Hackney and the contiguous boroughs.
- radial public transport from the north and significant movements from Essex (car and rail), Redbridge and Islington and Tower Hamlets.
- surprisingly large cross-River Thames movement from Kent.
- There were concentrations of public transport users in Hackney and contiguous boroughs (bus) and in Essex/Kent (rail). Car users tended to be located in the north-east sector stretching from Enfield to Essex.
- Home to work distance for car users was shorter than for rail, about the same as for underground, and longer than for bus.

1. Home locations were coded to 4 digits of the 1971 GLTS zoning system.

Brimsdown

- strong north-south concentration of home location with over half of all employees living in LB Enfield.
- home locations more concentrated than in South Shoreditch.
- relatively little cross River Lea movement except for car trips from Waltham Forest.
- considerable out commuting from Harringay, Hackney and Waltham Forest.
- proportionally more car users travelled from the north (Cheshunt, Hertford) than was the case for public transport users, for whom there was proportionally more out-commuting from Harringay and Hackney.
- There appeared to be little difference in home to work distance between car and public transport.

5.1.3. Background : business trips.

Business trips were reported by 67 respondents in South Shoreditch and 50 in Brimsdown. Table 39 lists the characteristics of reported business trips. Differences between study areas included :

- mode split (use of public and walk modes in South Shoreditch)
- time of departure (avoidance of the morning peak in South Shoreditch).
- destination (most South Shoreditch trips are in the London area).
- length of trip (more long trips in Brimsdown).

To a large extent these differences reflected differences in the study areas and the type of industry they attract. Trips from South Shoreditch were typically to destinations elsewhere in the London area so that public transport (especially underground) and walking were attractive modes. Because of the peripheral location of the study area and the dispersed trip destinations there was a much greater car usage in Brimsdown, and also because of the length of trips a necessity to travel in the morning peak.

Fig: 11
South Shoreditch and
Brimsdown:
Residential Origin
of Respondents:

..... urban area
 — zoning system
 — G.L.C. boundary
 [stippled] study areas

Numbers shown are:
 Brent - zone
 1.0 - % of South Shoreditch
 respondents from zone
 0.4 - % of Brimsdown
 respondents from zone

Respondents:		
South Shoreditch	Brimsdown	
Number	597	500
% shown on map	98.2	98.2
% origin not ascertained	1.8	1.8
Total	100.0	100.0

[diagonal lines] +5% of South Shoreditch respondents from zone
 [cross-hatch] +5% of Brimsdown respondents from zone

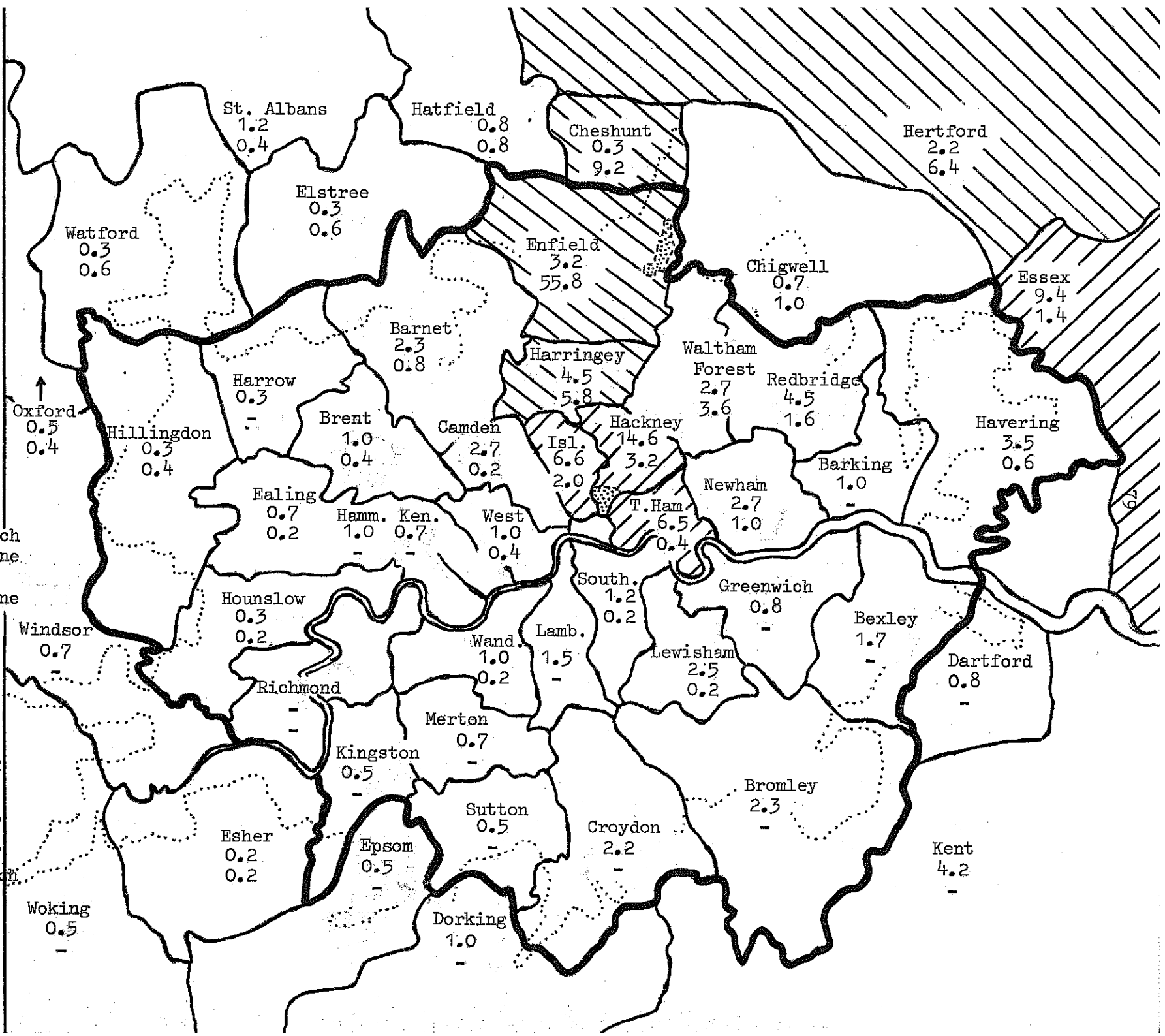


Fig: 12.
South Shoreditch:
Residential Origin of
Respondents by main mode
of transport to work

- Urban area
- Zoning system
- G.L.C. boundary
- Study areas

Numbers shown are:
 Brent - zone
 1.5 - % of total private mode users from zone.
 0.9 - % of total public mode users from zone.

Respondents:

	private	public
Number	196	335
%shown on map	98.0	98.2
%origin not ascertained	2.0	1.8
Total	100.0	100.0

- +5% of private mode users from zone
- +5% of public mode users from zone

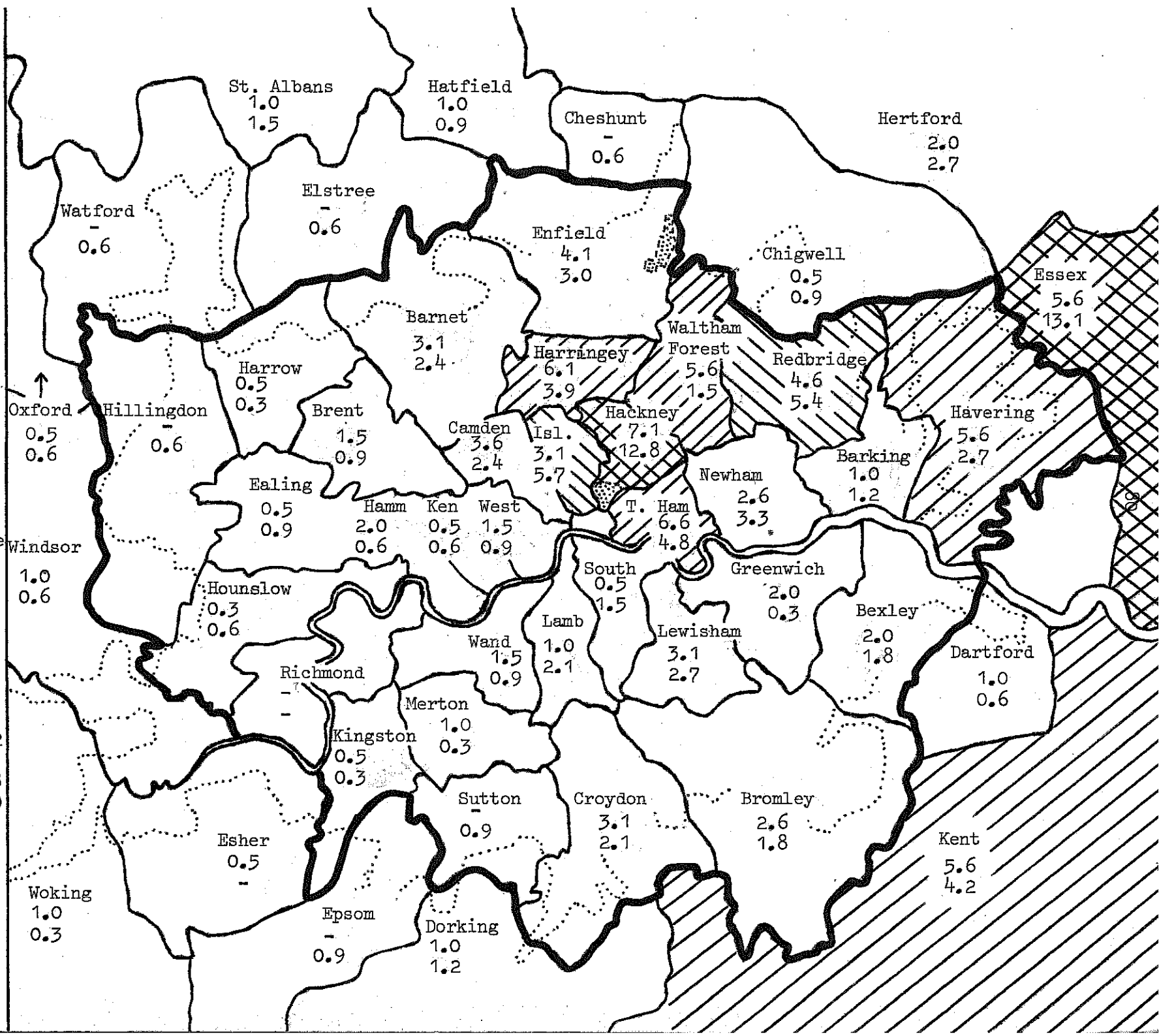




Fig: 13
Brimsdown: Residential
origin of respondents by
main mode of transport
to work

- Urban area
- Zoning system
- G.L.C. boundary
- Study areas

Numbers shown are:
 Brent - zone
 0.3 - % of total private
 mode users from
 zone.
 1.3 - % of total public
 mode users from
 zone.

Respondents:		
	private	public
Number	308	79
% shown on map	98.4	97.5
% origin not ascertained	1.6	2.5
Total	100.0	100.0

-  car 5%
-  bus 5%

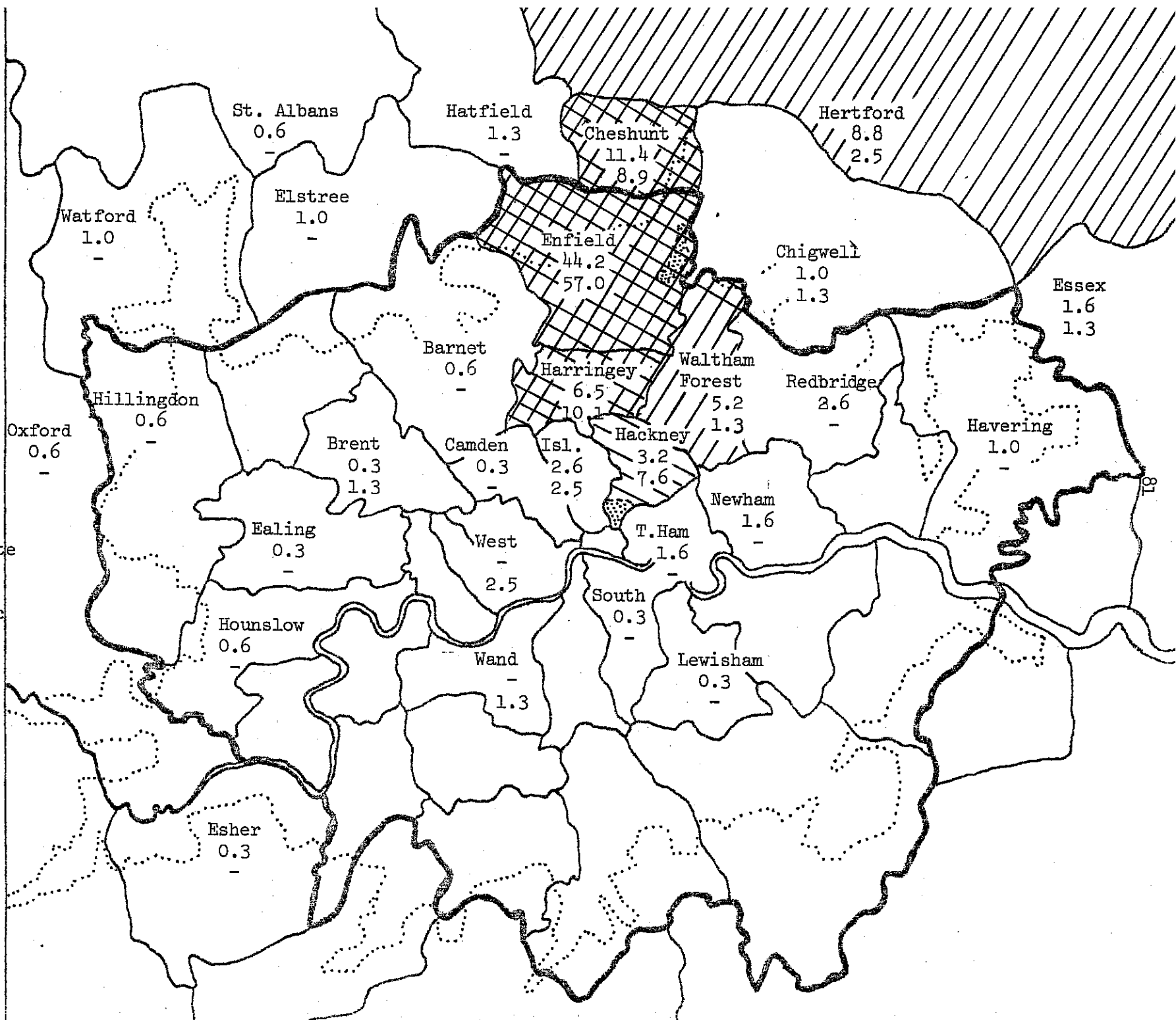


TABLE 39. EMPLOYEE QUESTIONNAIRE : CHARACTERISTICS OF BUSINESS TRIPS

(percentage of reported trips).

	South Shoreditch	Brimsdown
Mode split :		
private	45.6	81.2
public	31.6 ¹	7.3
walk	17.7	11.5
other	5.1	0
	100%	100%
Time of departure from firm :		
0730 - 0930	13.5	39.3
0931 - 1200	46.2	36.9
1201 - 1400	28.8	8.3
1401 - 1600	11.5	9.5
1631 - 1800	0	6.0
	100%	100%
Destination :		
Study area	16.1	25.0
London area	73.2	29.8
Outside London area	10.7	45.2
	100%	100%
Length of trip (i.e. total time away from building)		
less than $\frac{1}{2}$ hour	21.2	16.0
$\frac{1}{2}$ - 1 hour	13.6	14.0
1 - 2 hours	16.7	18.0
2 - 4 hours	27.3	9.0
4+ hours	21.2	43.0
	100%	100%

1. 60.0% of which were by underground.

5.1.4. Background : personal trips.

Table 40 lists the extent and variation of reported personal trips and Table 41 gives trip details. The most important difference between study areas was mode split. The very high proportion of walk trips in South Shoreditch indicated that the inner area was relatively better provided with facilities than Brimsdown, where a combination of location of facilities and provision of public transport necessitated the use of private transport (the greater use of car for the journey to work also contributed). Compared with the journey to work, a much lower proportion of those using private transport in Brimsdown travelled as passengers.

TABLE 40. EMPLOYEE QUESTIONNAIRE : PERSONAL TRIPS, EXTENT AND VARIATION

	percentage of respondents reporting at least one trip ¹		av. no. of trips per person for those who made trips	
	South Shoreditch	Brimsdown	South Shoreditch	Brimsdown
Mon.	22.4	20.8	1.07	1.11
Tues.	22.9	19.4	1.08	1.10
Wed.	23.6	21.6	1.07	1.12
Thurs.	25.8	22.4	1.07	1.06
Fri.	24.5	23.0	1.15	1.10
Average	23.8	21.4	1.09	1.10

1. Because of non-completion of this section of the question by some employees the extent of personal trips may be underestimated.

TABLE 41. EMPLOYEE QUESTIONNAIRE : CHARACTERISTICS OF PERSONAL TRIPS

(% of respondents who reported trips)

	South Shoreditch	Brimsdown
<u>Trip purpose</u>		
Lunch	55.3	61.9
Shopping	15.9	18.7
Services	22.9	14.8
Other	5.9	4.7
	100%	100%
<u>Mode split</u>		
Private	4.4 ¹	49.0 ³
Public	2.5	2.1
Walk	92.2	38.6 ⁴
Other	0.8 ²	10.3
	100%	100%
Average cost of return trip for those using public transport (pence)	76.0	21.1
Average total time away from firm per return trip (minutes)	36.7	38.4
Proportion of trips with destinations inside the respective study area	97.5	82.1

1. 100.0% driver.
2. 33.3% taxi, 66.7% motorcycle.
3. 91.5% driver, 8.5% passenger.
4. 26.7% motorcycle, 73.3% bicycle.

5.2. Group A to C problems: journey to work.

5.2.1. Group A (on-route to site). Table 42 lists the response of employees who travelled by private transport to possible group A problems.

TABLE 42. EMPLOYEE QUESTIONNAIRE : GROUP A PROBLEMS, PRIVATE MODE
(group A = on-route to site; % of respondents who used private mode mentioning problem).

	South Shoreditch			Brimsdown		
	un-prompted	prompted	mean score ¹	un-prompted	prompted	mean score ¹
Delays by traffic	55.1 ²	74.4	44	43.8 ²	65.3	34
Indirect route	0.5	34.7	16	0.3	19.5	8
Effect of traffic management measures	3.6	n.a.	n.a.	24.4 ³	n.a.	n.a.
Poor road surface	0.5	n.a.	n.a.	0.3	n.a.	n.a.
Others	4.1	n.a.	n.a.	5.8	n.a.	n.a.
Stated at least one unprompted problem	55.1			51.0		
Stated there were no problems	3.6			12.0		
No response (unprompted)	41.3			37.0		

1. See Appendix IV for calculation of mean score.
2. Several respondents stated more than one aspect of the problem.
3. Including disruption and delays at traffic lights and level crossings.

Comment : (i) Half of those who travelled by private transport in both areas mentioned at least one aspect of congestion and traffic delays as an unprompted problem.

(ii) Prompted responses suggested that congestion and indirect routeing were more of a problem in South Shoreditch and this is supported by overall rating of journey to work (degree of dissatisfaction was 40 in South Shoreditch and 32 in Brimsdown), and by the greater travel time and variability in travel time in South Shoreditch:

	<u>South Shoreditch</u>	<u>Brimsdown</u>
Journey to work varied by :		
less than 5 mins.	17.9	34.9
5 - 10 mins.	40.5	50.8
more than 10 mins.	41.6	14.3
	100%	100%

The high proportion of South Shoreditch respondents with variability greater than 10 minutes was of particular concern because of the consequences in terms of lost time through late arrivals.

(iii) The easier journey to work conditions for Brimsdown employees were only partly reflected in their lower perceived degree of seriousness and overall level of dissatisfaction.

(iv) The locations of congestion problems were :

	unprompted		prompted	
	South Shoreditch	Brimsdown	South Shoreditch	Brimsdown
Proportion of specified locations :				
(i) within study area	11.3	50.3 ¹	6.0	42.1 ²
(ii) elsewhere in London	83.5	47.7	90.3	56.0
(iii) outside London	5.2	2.0	3.7	1.9
	100%	100%	100%	100%

1. 40% of which referred to level crossings.
2. 10% of which referred to level crossings.

The distribution of locations was partly explained by home locations and partly by traffic conditions in the study area relative to surrounding areas.

(v) Comparison with management interview.

In spite of easier conditions in Brimsdown (travel time and variability), private transport was more important as a journey to work mode in Brimsdown and consequently management saw greater difficulties than in South Shoreditch. As a cause of late arrival, staff turnover etc., private transport may have been relatively more important in Brimsdown, although Section 5.2.3. suggests that public transport deficiencies in the outer area also led to serious effects.

(vi) The only problem identified by those who walked to work was danger walking, mentioned prompted by 14.0% of the South Shoreditch respondents who walked to work (mean score = 5.8), and 19.2% of the Brimsdown respondents (mean score = 11.5). Delays caused by traffic were mentioned prompted by 7.0% and 3.8% of respondents respectively, and indirect routeing by 1.8% and 5.8% respectively.

5.2.2. Group B (parking). Table 43 lists the response of employees who travelled by private mode to possible group B problems and provides data on parking location and walk distance.

TABLE 43. EMPLOYEE QUESTIONNAIRE: GROUP B PROBLEMS (parking)
(% of respondents who used private mode mentioning problem)

	South Shoreditch			Brimsgate		
	un-prompted	prompted	mean score ¹	un-prompted	prompted	mean score ¹
Inadequate parking	1.0	17.9	10	0.3	7.1	4
Parking cost	0	16.3	11	0	0	0
Walk distance from pkg.	0	18.4	7	0	2.6	1
Danger walking	0	9.6	5	0	3.6	2
Parking location :						
firm's car park		55.0			76.3	
other off-street		8.0			5.3	
on-street		34.4			13.7	
car not parked		2.6			4.7	
		100%			100%	
Stated walk distance :						
0-50 yards		52.5			83.2	
50 - 100 yards		9.0			5.4	
100 - 200 yards		14.1			4.6	
200 - 400 yards		9.6			2.9	
400+ yards		14.7			3.9	
		100%			100%	
Proportion of respondents who stated that time was spent searching for parking		11.0%			5.0%	

1. See Appendix IV for calculation of mean scores.

Comment : (i) In view of the considerable parking difficulties in South Shoreditch discussed in Chapter 4, the low response by employees was unexpected. For example only about half of the 34.4% who parked on-street mentioned inadequate parking or cost as a problem. By contrast parking difficulties were experienced at relatively few Brimsdown firms and this was reflected in response rates.

(ii) Most South Shoreditch respondents who parked away from the site walked more than 200 yards¹, and this was seen as a slightly greater problem than either parking supply or cost.

(iii) One-third of South Shoreditch respondents who parked on-street spent time searching for parking, adding to the time penalty associated with long walk distances.

(iv) Although management of half the firms in each study area stated a shortfall of on-site spaces for employees, it appeared that this was not seen by employees to be a serious problem. Its contribution to employee dissatisfaction, and retention and recruitment, may have been relatively minor.

1. This may infer that on-street parking by a firm's own employees would not greatly reduce the supply of short-term spaces available adjacent to that firm; however it is more likely that there is a cumulative effect of on-street employee parking by all firms in the vicinity.

5.2.3. Group C (public transport). Table 44 lists the response of employees who travelled by public transport to possible group C problems.

TABLE 44. EMPLOYEE QUESTIONNAIRE : GROUP C PROBLEMS (PUBLIC TRANSPORT)

(% of employees who used public transport mentioning problem; see Appendix VI for response by type of public transport mode.)

	South Shoreditch			Brimsdown		
	un-prompted	prompted	mean score ¹	un-prompted	prompted	mean score ¹
Delays by traffic	10.1	36.7	19	11.4	55.7	32
Indirect route	0.3	23.9	9	0	34.2	19
Effect of traffic management measures	0.9	n.a.	n.a.	5.1	n.a.	n.a.
Poor road surface	0	n.a.	n.a.	0	n.a.	n.a.
Inadequate service frequency	11.9	51.6	29	20.3	77.2	54
Inadequate service coverage	1.2	n.a.	n.a.	5.1	n.a.	n.a.
Reliability ²	42.1	70.4	41	36.7	82.3	57
Walk distance from stop/station	1.2	23.6	9	0	29.1	16
Cost	1.5	60.3	41	0	51.2	38
Transfers	1.8	25.7	11	7.6	32.9	20
Crowded	12.5	n.a.	n.a.	3.8	n.a.	n.a.
Comfort	2.1	n.a.	n.a.	3.8	n.a.	n.a.
Danger walking	0.6	15.5	7	0	15.2	7
Others	11.6	3.3	2	1.3	1.3	1
Stated at least one unprompted problem	63.3			58.2		
Stated there were no problems	3.3			2.5		
No response (unprompted)	33.4			39.3		

1. See Appendix IV for calculation of mean scores.

2. Services not keeping to timetable.

Comment : (i) Over half of those who travelled by public transport in both areas mentioned at least one unprompted problem. Reliability was extensively reported; and congestion, inadequate service frequency and in the case of South Shoreditch, crowded services were also seen as problems. (ii) Prompting increased response rates and with the exception of Danger Walking all items on the prompted list were considered a problem by at least 25% of respondents in each study area. The rank order of prompted problems in terms of stated degree of seriousness was :

	<u>South Shoreditch</u>	<u>Brimmsdown</u>
Delays by traffic	4	4
Indirect route	6	6
Inadequate service frequency	3	2
Reliability	1	1
Walk distance	7	7
Cost	1	3
Transfers	5	5
Danger Walking	8	8

(iii) The prompted response rates and mean scores indicated that there were differences between study areas in perception of :

- delays by traffic (worse in Brimmsdown)
- indirect route (worse in Brimmsdown)
- inadequate service frequency (worse in Brimmsdown)
- reliability (worse in Brimmsdown)

and walk distance and transfers also appeared to be considered as somewhat worse in Brimmsdown.

(iv) Table 45 provides background data from the employee questionnaire against which the stated problems can be judged.

(v) Data from Table 45 indicated that averaged over all public transport modes, trips in Brimmsdown were shorter and cheaper than in South Shoreditch and that walk distance was less although there was greater stated variability in journey time.

(vi) Viewed against this trip data, it was surprising that Brimmsdown respondents were more dissatisfied than South Shoreditch respondents.

(vii) Differences in both trip data and problem response were largely explained by differences in mode split (Tables 34 and 35). Most Brimmsdown respondents used bus, for which traffic congestion was an important factor whereas half of those in South Shoreditch travelled by train.