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Working Paper 207

August 1985

REQUIREMENTS FOR COMPUTERISED RAIL PASSENGER
SERVICE INFORMATION SYSTEM

Results of surveys at Doncaster, Woking,
Euston, Halifax and Gatwick

F. Ghahri-Saremi and C.A. Nash

This work was sponsored by the Science and Engineering
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Abstract

GHAHRI-SAREMI, F AND NASH C A (August 1985) Requirements for a Computerised Rail Passenger Service Information System. Results of surveys at Doncaster, Woking, Euston, Halifax and Gatwick. Working Paper 207, Institute for Transport Studies, University of Leeds, Leeds

The background, survey methodology of this research project, and the results of surveys at Leeds City station have been discussed in Working paper 206. In this Paper we put forward the result of surveys at Doncaster, Woking, Euston, Halifax and Gatwick.

For the most part, the results are similar to those given for Leeds in the earlier paper. Notable differences, however, are the much greater proportion of 'other station to other station' enquiries at Woking (37%), Euston (22%) and Gatwick (33%). Enquiries at Woking and Gatwick took longer to answer than elsewhere. Conversely, Halifax, with a higher proportion of enquiries relating to local journeys, produced the fastest answers.

A summary of results from all the surveys, together with discussion of a survey on the use of the Prestel terminals provided for passengers at Kings Cross and overall conclusions from the study will be reported in a separate paper (Working Paper 208).

CHAPTER 1

Results of the Doncaster surveys

In this chapter we will discuss the results of analyses of the Doncaster data.

The survey undertaken at Doncaster station consists of:

Telephone bureaux;

Date 16.10 : 1 hour morning, 1 hour afternoon, and 2 hour evening.

Date 17.10 : 1 hour morning, 1 hour afternoon, and 1 hour evening.

Date 19.10 : 2 hour evening.

Date 20.10 : 2 hour afternoon.

Information desk;

Date 16.10 : 1 hour morning, 1 hour afternoon, and 1 hour evening.

Date 17.10 : 1 hour morning, 1 hour afternoon, and 1 hour evening.

Date 19.10 : 2 hour afternoon.

Date 20.10 : 2 hour morning.

Data analyses have concentrated on the nature of these telephone bureaux and information desk inquiries. They fall into 7 broad areas: firstly general characteristics such as range of information, secondly range of Origin and Destination, thirdly complexity of inquiry, fourthly how far ahead the passengers are planning their journeys, fifthly day of the week involved, sixthly range of fare inquiry, and finally average time taken to answer each inquiry.

Some 12% of all enquiries related to matters other than train times and fares. These have been excluded from the subsequent analysis.

d.1: Range of information.

Overall there were 279 telephone inquiries at Doncaster station. Table 1 illustrates the range of inquiries for different survey days while Table 2 shows their relative importance.

Date	Total	Timetable only	Fare only	Timetable and Fare
16/10	82	40	21	21
17/10	66	37	11	18
19/10	71	45	9	17
20/10	60	35	6	19
Total	279	157	47	75

Table 1: Frequency of range of information by date at Doncaster station. (Telephone bureaux)

Date	Total	Timetable only	Fare only	Timetable and Fare
16/10	100	46.78	25.61	25.61
17/10	100	56.06	16.67	27.27
19/10	100	63.38	12.68	23.94
20/10	100	58.33	10.00	31.67
Total	100	56.27	16.85	26.88

Table 2: Relative importance of range of inquiries by date at Doncaster station. (Telephone bureaux)

Inquiries relating to timetables only were the most numerous accounting for 56 percent of all inquiries, followed by inquiries relating to a combination of timetable and fare inquiries, which accounted for 27 percent and finally fares only which accounted for 17 percent of all inquiries.

At the information desk there were 130 inquiries overall. Table 3 details the frequency of various inquiry types for

different days of the survey while Table 4 shows their relative importance. The range of inquiries at information desk follows the same pattern as telephone bureaux with a smaller magnitude, timetable only 39%, combination of timetable and fare 32% and fares only 29%. These tables clearly show that the range of inquiries at information desk are not significantly different.

Date	Total	Timetable	Fare	Timetable and Fare
16/10	30	3	12	15
17/10	18	7	6	5
19/10	35	13	11	11
20/10	47	27	9	11
Total	130	50	38	42

Table 3: Frequency of range of information by date at Doncaster station. (Information desk)

Date	Total	Timetable only	Fare only	Timetable and Fare
16/10	100	10.00	40.00	50.00
17/10	100	38.89	33.33	27.78
19/10	100	37.14	31.43	31.43
20/10	100	57.45	19.15	23.40
Total	100	38.46	29.23	32.31

Table 4: Relative importance of range of inquiries by data at Doncaster. (Information desk)

Table 5 demonstrates the overall frequency distribution of range of inquiries for different information points while Table 6 shows their relative frequency. Timetable inquiries only was the

most frequent information which passengers are seeking and accounted for 51 percent of all inquiries, followed by combination of timetable and fare inquiries, which accounted for 29% and finally fares only which accounted for 21% of all inquiries.

It is significant that as at Leeds nearly a half of all enquiries involve fares information. Clearly, a computerised system would be of most value if it incorporated fares as well as timetable information.

Date	Total	Timetable only	Fare only	Timetable and Fare
Telephone bureaux	279	157	47	75
Information desk	130	50	38	42
Total	409	207	85	117

Table 5: Frequency of range of information by information points at Doncaster station.

Date	Total	Timetable only	Fare only	Timetable and Fare
Telephone bureaux	100	56.27	16.85	26.88
Information desk	100	38.46	29.23	32.31
Total	100	50.61	20.78	28.61

Table 6: Relative frequency of range of information by information points at Doncaster station.

d.2: Range of Origin and Destination.

As described in working paper 206 the ranges of Origin and Destination play a very important role in the design of any computerised passenger information system. Table 7 gives detailed information about the ranges of Origin and Destination in Doncaster station by different information points. Origins and Destinations are defined as "Doncaster", "local", (for detail and station names see Appendix 1) and "other".

Origin	Total		Telephone bureaux		Information desk	
	F	%	F	%	F	%
Don* to Local	55	13.45	44	15.77	11	8.46
Local to Don*	6	1.47	5	1.79	1	0.77
Don* to Other	279	68.21	179	64.16	100	76.92
Other to Don*	48	11.73	37	13.26	11	8.46
Local to Local	0	0.0	0	0.0	0	0.0
Local to Other	8	1.96	6	2.15	2	1.54
Other to Local	0	0.0	0	0.0	0	0.0
Other to Other	13	3.18	8	2.87	5	3.85
Total	409	100	279	100	130	100

Table 7: Range of Origin and destination by information points at Doncaster station.

Don* stands for Doncaster.

As expected, inquiries related to long distance journeys starting at Doncaster station (row "Doncaster to Other") are the most frequent, accounting overall for 68 percent of inquiries. The passengers making such inquiries at telephone bureaux comprise 64 percent of total telephone inquiries while the same inquiries accounted for 77 percent of total inquiries at the

information desk. These results show that most of the passengers coming to the information desk intended to make journeys originated from Doncaster station, but in telephone bureaux inquiries are for a wider range of Origin. (eg. other destinations to Doncaster in telephone bureaux is 13 percent of all inquiries while from the information desk it is 8 percent of all inquiries.

Were a computerised information system only able to deal with journeys to or from Doncaster station, this sort of system will give answers to 95 percent of all inquiries at the information desk and same percent of all inquiries at telephone bureaux.

If the passenger information system is based on Doncaster and Local stations, it will answer 97 percent of all inquiries at the information desk and 96 percent of all inquiries at telephone bureaux. Overall it will thus answer 97 percent of all inquiries at Doncaster station, which clearly shows that other to other station enquiries are not very important at Doncaster station.

d.3: Complexity of inquiry.

"Complexity of inquiry" is measured basically by the number of changes of train involved. Clearly it is for the more complex inquiries that the speed and accuracy of a computerised system would offer greatest benefit.

The frequency of journeys involving different numbers of changes for each data collection point is given in Table 8 and its relative frequency is given in Table 9. These tables are derived from answers given by the clerk; in general, it appeared to us that clerks suggested through trains whenever possible, unless specifically directed to look for a faster or an earlier or later train. Nethertheless, it is significant that 99 percent of the journeys involved no more than two changes. Whilst very complicated journeys do occur, they appear to be the exception rather than the rule.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Telephone bureaux	232	160	57	14	1	0
Information desk	92	56	29	6	1	0
Total	324	216	86	20	2	0

Table 8: Frequency of number of changes by data collection point at Doncaster station.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Telephone bureaux	100	68.97	24.57	6.03	0.43	0.0
Information desk	100	60.87	31.52	6.52	1.09	0.0
Total	100	66.67	26.54	6.17	0.62	0.0

Table 9: Relative frequency of number of changes by data collection points at Doncaster station.

d.4 Journey constraints

The constraints on which we collected information were the following:

- 1: The inquirer seeks to depart from origin station at a certain time of the day. Or
- 2: He wishes to arrive at the destination station at a certain time of the day. Or
- 3: He requested a through train. Or
- 4: Combination of the above.

The frequency distribution of journey constraints for each data collection point is given in Table 10, and its relative frequency is given in Table 11.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraint
Phone *	232	150	24	9	4	9	2	34
Desk *	92	45	11	4	0	6	0	26
Total	324	195	35	13	4	15	2	60

Table 10: Frequency of constraint by data collection points at Doncaster station.

* Phone stands for Telephone bureaux and Desk stands for Information desk.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraints
Phone *	100	64.66	10.34	3.88	1.72	3.88	0.86	14.66
Desk *	100	48.91	11.96	4.35	0.0	6.52	0.0	28.26
Total	100	60.19	10.80	4.01	1.23	4.63	0.62	18.52

Table 11: Relative frequency of constraint by data collection points at Doncaster station.

At the telephone bureaux inquiries relating to constrained journeys accounted for 85 percent of all timetable inquiries, and departure time constraint is the most numerous one accounting for 70 percent of all timetable inquiries. In addition, requests for the next train, although not coded as departure time constraints, do reflect a desired departure time. These form the bulk of the unconstrained journeys. But at the information desk constrained journeys accounted for 72 percent of all timetable inquiries, and departure time constraint accounted for 55 percent of all timetable inquiries. Around 9% of passengers specifically requested a through train; 13% specified arrival time constraints.

Overall table 11 shows that those passengers making inquiries by ringing the telephone bureaux constrained their inquiries more than those making inquiries by attending the information desk. Presumably, this is because of the greater number of requests for the next train.

d.5: How far ahead the passengers are planning their journeys.

First we have to specify the relation between journey date and date of inquiry. How long before journeys the passengers are making inquiries about them is important for any computerised passenger information system, in order to know how far in advance information on timetable changes must be available.

Table 12 gives detailed frequency distributions of categories of time ahead by data collection points, while table 13 shows their relative frequency.

Location	Total	Same day	next day	Within				
				2-4 day	5-7 day	8-10 day	11-14 day	15+ day
Phone*	64	20	12	24	5	0	0	3
Desk*	44	9	8	15	5	3	3	1
Total	108	29	20	39	10	3	3	4
				69		6		

Table 12: Frequency distribution of categories of time ahead by data collection point at Doncaster tation.

Location	Total	Same day	next day	Within				
				2-4 day	5-7 day	8-10 day	11-14 day	15+ day
Phone*	100	31.25	18.75	37.75	7.81	0.0	0.0	4.69
Desk*	100	20.46	18.18	34.09	11.36	6.82	6.82	2.27
Total	100	26.85	18.52	36.11	9.26	2.78	2.78	3.70
				63.89		5.56		

Table 13: Relative frequency distribution of catagorys of time ahead by data collection point at Doncaster.

At the information desk, within 2 to 4 days timetable inquiries were the most frequent accounting for 34 percent of all inquiries, followed by same day timetable inquiries which accounted for 20 percent; next days which accounted for 18 percent. At the telephone bureaux timetable inquiries referring to

next day have more or less the same magnitude as information desk, but within 2 to 4 days ahead accounted for 38% and same day timetable inquiries accounted for 31% for all inquiries.

Overall, same day timetable inquiries accounted for 27 percent of all timetable inquiries, within next week timetable inquiries accounted for a further 64 percent of all timetable inquiries, within 8 to 14 days ahead timetable inquiries accounted for 6 percent of all timetable inquiries, and more than 14 days ahead accounted for 4 percent.

In the light of the above, we see that if amendments or new timetables were available at least 14 days before introduction, the passenger information system would be able to answer about 96 percent of all timetable inquiries.

d.6: Days of the Week.

The detailed frequency distribution of days of the week about which the passengers are making inquiries with respect to data collection points are presented in Table 14, and their relative frequency distribution are presented in Table 15. Enquiries relating to the same day are excluded, but the results may still be biased by the fact that our surveys only took place on certain days of the week.

Location	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
Phone	113	17	4	8	8	12	42	14	8
Desk	49	12	1	4	3	6	9	9	5
Total	162	29	5	12	11	18	51	23	13

Table 14: Frequency distribution of week days by data collection points at Doncaster station.

Location	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
Phone	100	15.04	3.54	7.08	7.08	10.62	37.17	12.39	7.08
Desk	100	24.49	2.04	8.16	6.12	12.25	18.37	18.37	10.20
Total	100	17.90	3.09	7.41	6.79	11.11	31.48	14.20	8.02

Table 15: Relative frequency distribution of week days by data collection points at Doncaster station.

The most important point here is to know how many inquiries relate to Sundays, when engineering work often leads to short-term retiming of trains. About 14 percent of enquiries fall into this category.

d.7: Range of Fare Enquiry

Overall, 122 enquirers rang the telephone inquiries office to make 150 inquiries about the range of fares; 80 passengers approached the information desk where they made 100 inquiries about different fare categories. Table 16 shows the detailed frequency of each fare category with respect to data collection points, while Table 17 shows the relative frequency.

Location	Total	Ord Sing.	Ord Ret.	Day Ret.	W/E Ret.	Saver	Rail Card	Other	seat res
Phone	150	19	47	32	11	21	9	7	4
Desk	100	16	23	15	5	15	3	4	19
Total	250	35	70	47	16	36	12	11	23

Table 16: Frequency of Fare category at Doncaster station.

Locat- ion	Total	Ord Sing.	Ord Ret.	Day Ret.	W/E Ret.	Sav er	Rail Card	Other	seat res
Phone	100	12.67	31.33	21.33	7.33	14.00	6.0	4.67	2.67
Desk	100	16	23	15	5	15	3	4	19
Total	100	14	28	18.8	6.4	14.4	4.8	4.4	9.2

Table 17: Relative Frequency of Fare category at Doncaster station.

Overall, "ordinary return" and "day return" are the most popular categories which account for 28 percent and 19 percent of all fare inquiries respectively. The "ordinary single" and "saver" have the same magnitude each accounting for 14% of all fare inquiries. The rest have more or less the same magnitude, accounting for between 4.4 and 6.4 percent of all fare inquiries.

d.8: Average time taken to answer each inquiry.

In this section we examine the average time taken for the clerk to answer category of inquiries with respect to each data collection points. Although the recording of time taken was rough, we should expect the averages to be reasonably accurate.

Table 18 gives detailed information about the total frequency of each category of inquiries by data collection points, and the average time taken to answer it.

Location	Total		Timetable		Fare		Timetable & Fare	
	F	T	F	T	F	T	F	T
Phon	279	1.05	157	0.96	47	1.03	75	1.28
Desk	130	2.33	50	1.53	38	2.16	42	3.46
Total	409	1.46	207	1.10	85	1.53	117	2.06

Table 18: Frequency and time taken for each category at Doncaster station.

As we expected on average the time taken to answer any inquiry about combinations of timetable and fares is the highest one, especially at information desk. Fare only enquiries appear to take longer than timetable only enquiries. What is noteworthy is that the average enquiry appears to take only some 100 seconds. Judging by previous experience at Leeds station (see working paper 206) it would appear that only one third of time taken is spent consulting sources. The rest of the time is devoted to interaction with the customer.

d.9 Conclusions from the Doncaster surveys

We may summarise the results of the Doncaster surveys as follows:

1. Nearly a half of all inquiries require fares information as well as or instead of train times.
2. Most of the enquiries relate to fairly simple journeys; only about 1% involve more than two changes of train.
3. Most passengers (66%) give a desired departure time; around 9% specify that they want a through train and some 13% specify a desired arrival time.
4. 27% of inquiries relate to the same day, and a further 64% to the same week. 4% of inquiries relate to more than 14 days ahead.
5. 14% of inquiries relate to Sunday travel.
6. The mean time taken for all inquiries is some 100 seconds.

These results are very similar to those obtained at Leeds.

CHAPTER 2

Results of the Woking surveys

In this chapter we will discuss the results of analyses of the Woking data.

The survey undertaken at Woking station consists of:

Telephone bureaux;

Date 18.10 : 2 hours morning, 2 hours afternoon, and 2 hours evening.

Date 19.10 : 2 hours evening.

Date 20.10 : 2 hours morning.

Information desk;

Date 18.10 : 2 hour morning, and 2 hour afternoon.

Date 19.10 and 20.10 : each day 2 hours afternoon.

Data analyses have concentrated on the nature of these telephone bureaux and information desk inquiries. They fall into 7 broad areas: as specified in chapter 1.

Some 13% of all enquiries related to matters other than train times and fares. These have been excluded from the subsequent analysis.

w.1: Range of information.

Overall there were 170 telephone inquiries at Woking station. Table 19 illustrates the range of inquiries for different survey days while Table 20 shows their relative importance.

Date	Total	Timetable only	Fare only	Timetable and Fare
18/10	110	60	26	24
19/10	31	21	5	5
20/10	29	15	10	4
Total	170	96	41	33

Table 19: Frequency of range of information by date at Woking station. (Telephone bureaux)

Date	Total	Timetable only	Fare only	Timetable and Fare
18/10	100	54.55	23.64	21.81
19/10	100	67.74	16.13	16.13
20/10	100	51.73	34.48	13.79
Total	100	56.47	24.12	19.41

Table 20: Relative importance of range of inquiries by date at Woking station. (Telephone bureaux)

Inquiries relating to timetables only were the most numerous accounting for 57 percent of all inquiries, but unlike Doncaster it was followed by inquiries relating to fares inquiries, which accounted for 24 percent and finally a combination of timetable and fare which accounted for 19 percent of all inquiries.

At the information desk there were 66 inquiries overall. Table 21 details the frequency of various inquiry types for different days of the survey while Table 22 shows their relative importance. As we expected, inquiries related to timetables only

were the most numerous, accounting for 39 percent of all inquiries. In contrast to telephone bureaux this was followed by inquiries relating to a combination of timetable and fare accounting for 33 percent of all inquiries, and finally fare only which accounted for 27 percent of all inquiries.

Date	Total	Timetable	Fare	Timetable and Fare
18/10	38	17	7	14
19/10	17	6	7	4
20/10	11	3	4	4
Total	66	26	18	22

Table 21: Frequency of range of information by date at Woking station. (Information desk)

Date	Total	Timetable only	Fare only	Timetable and Fare
18/10	100	44.74	18.42	36.84
19/10	100	35.29	41.18	23.53
20/10	100	27.28	36.36	36.36
Total	100	39.28	27.27	33.33

Table 22: Relative importance of range of inquiries by data at Woking. (Information desk)

Table 23 demonstrates the overall frequency distribution of range of inquiries for different information points while Table 24 shows their relative frequency. Timetable inquiries only was the most frequent information which passengers are seeking and accounted for 52 percent of all inquiries. Overall, inquiries relating to fare only and combination of timetable and fare inquiries have more or less the same magnitude accounting for 23 and 25 percent of all inquiries.

Date	Total	Timetable only	Fare only	Timetable and Fare
Telephone bureaux	170	96	41	33
Information desk	66	26	18	22
Total	236	122	59	55

Table 23: Frequency of range of information by information points at Woking station.

Date	Total	Timetable only	Fare only	Timetable and Fare
Telephone bureaux	100	56.47	24.12	19.41
Information desk	100	39.40	27.27	33.33
Total	100	51.69	25.00	23.31

Table 24: Relative frequency of range of information by information points at Woking station.

w.2: Range of Origin and Destination.

Table 25 gives detailed information about the ranges of Origin and Destination in Woking station by different information points. Origins and Destinations are defined as "Woking", "local", (for detail and station names see Appendix 2) and "other".

Origin	Total		Telephone bureaux		Information desk	
	F	%	F	%	F	%
Woking to Local	4	1.69	2	1.18	2	3.03
Local to Woking	3	1.47	3	1.79	0	0.00
Woking to Other	59	25.00	19	11.18	40	60.60
Other to Woking	8	3.39	3	1.76	5	7.58
Local to Local	7	2.97	7	4.12	0	0.0
Local to Other	52	22.03	52	30.59	0	0.00
Other to Local	16	6.78	16	9.41	0	0.0
Other to Other	87	36.87	68	40.00	19	28.79
Total	236	100	170	100	66	100

Table 25: Range of Origin and destination by information points at Woking station.

At information desk, inquiries related to long distance journeys starting at Woking station (row "Woking to Other") are the most frequent, accounting overall for 61percent of all inquiries. In contrast passengers making such inquiries at telephone bureaux comprise 11 percent of total telephone inquiries, overall the same inquiries accounted for 25 percent of total inquiries. These results show that most of the passengers coming to the information desk intended to make journeys originated from Woking station, but in telephone bureaux inquiries are for wider range of Origin. (eg. Local to other destinations in telephone bureaux is 31 percent of all inquiries while from the information desk it is 0 percent of all inquiries.

Were a computerised information system only able to deal with journeys to or from Woking station, this sort of system will give answers to 71 percent of all inquiries at the information desk and 16 percent of all inquiries at telephone bureaux. Overall it will therefore answer to 31 percent of all inquiries.

If the passenger information system is based on Woking and Local stations, it will answer 71 percent of all inquiries at the information desk and 60 percent of all inquiries at telephone bureaux. Overall it will thus answer 63 percent of all inquiries at Woking station. This result shows the importance of being able to handle a wider range of origins and destinations at Woking.

w.3: Complexity of inquiry.

As defined in chapter 1, "Complexity of inquiry" is measured basically by the number of changes of train involved.

The frequency of journeys involving different numbers of changes for each data collection point is given in Table 26 and its relative frequency is given in Table 27. It is significant that all the journeys involved no more than two changes, and through trains accounted for 70% of all journeys.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Telephone bureaux	129	91	27	11	0	0
Information desk	48	33	12	3	0	0
Total	177	124	39	14	0	0

Table 26: Frequency of number of changes by data collection point at Woking station.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Telephone bureaux	100	70.54	20.93	8.53	0.0	0.0
Information desk	100	68.75	25.00	6.25	0.0	0.0
Total	100	70.06	22.03	7.91	0.0	0.0

Table 27: Relative frequency of number of changes by data collection points at Woking station.

w.4: Journey constraints

The constraints on which we collected information were discussed in chapter 1.

The frequency distribution of journey constraints for each data collection point is given in Table 28, and its relative frequency is given in Table 29.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraint
Phone *	129	75	19	2	1	4	1	27
Desk *	48	22	10	1	0	2	1	12
Total	177	97	29	3	1	6	2	39

Table 28: Frequency of constraint by data collection points at Woking station.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraints
Phone *	100	58.14	14.73	1.55	0.78	3.10	0.78	20.92
Desk *	100	45.83	20.83	2.08	0.0	4.19	2.08	25.00
Total	100	54.80	16.39	1.69	0.57	3.39	1.13	22.03

Table 29: Relative frequency of constraint by data collection points at Woking station.

At the telephone bureaux inquiries relating to constrained journeys accounted for 81 percent of all timetable inquiries, and departure time constraint is the most numerous one accounting for 62 percent of all timetable inquiries. But at the information desk constrained journeys accounted for 85 percent of all timetable inquiries, and departure time constraint accounted for 50 percent of all timetable inquiries. Around 6% of passengers specifically requested a through train; 21% specified arrival time constraints.

Overall table 29 shows that those passengers making inquiries by ringing the telephone bureaux constrained their inquiries more than those making inquiries by attending the information desk.

w.5: How far ahead the passengers are planning their journeys.

Table 30 gives detailed frequency distributions of categories of time ahead by data collection points, while table 31 shows their relative frequency.

Location	Total	Same day	next day	Within				
				2-4 day	5-7 day	8-10 day	11-14 day	15+ day
Phone*	73	22	28	18	4	0	1	0
Desk*	27	4	10	7	2	0	2	2
Total	100	26	38	25	6	0	3	2
				69			3	

Table 30: Frequency distribution of categories of time ahead by data collection point at Woking.

Location	Total	Same day	next day	Within				
				2-4 day	5-7 day	8-10 day	11-14 day	15+ day
Phone*	100	30.14	38.36	24.66	5.47	0.0	1.37	0.0
Desk*	100	14.81	37.04	25.92	7.41	0.0	7.41	7.41
Total	100	26.00	38.00	25.00	6.00	0.00	3.00	2.00
				69.00			3.00	

Table 31: Relative frequency distribution of categories of time ahead by data collection point at Woking.

At the information desk, next day timetable inquiries were the most frequent accounting for 37 percent of all inquiries, followed by 2 to 4 days ahead timetable inquiries which accounted for 18 percent; same day which accounted for 15 percent. At the telephone bureaux timetable inquiries referring to next day,

accounted for 38% but unlike information desk it is followed by same day, which accounted for 30 percent; 2 to 4 days ahead which accounted for 25 percent.

Overall, same day timetable inquiries accounted for 26 percent of all timetable inquiries, within next week timetable inquiries accounted for a further 69 percent of all timetable inquiries, within 8 to 14 days ahead timetable inquiries accounted for 3 percent of all timetable inquiries, and more than 14 days ahead accounted for 2 percent.

In the light of the above, we conclude that if amendments or new timetables were available at least 14 days before introduction, the passenger information system would be able to answer about 98 percent of all timetable inquiries.

w.6: Days of the Week.

The detailed frequency distribution of days of the week about which the passengers are making inquiries with respect to data collection points are presented in Table 32, and their relative frequency distribution are presented in Table 33.

Location	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
Phone	17	2	0	0	0	1	5	5	4
Desk	20	2	1	0	1	1	3	7	5
Total	37	4	1	0	1	2	8	12	9

Table 32: Frequency distribution of week days by data collection points at Woking station.

Location	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
Phone	100	11.77	0.0	0.0	0.0	5.88	29.41	29.41	23.53
Desk	100	10.00	5.0	0.0	5.0	5.0	15.00	35.00	25.00
Total	100	10.81	2.7	0.0	2.7	5.41	21.62	32.43	24.33

Table 33: Relative frequency distribution of week days by data collection points at Woking station.

The most important point here is to know how many inquiries relate to Sundays, when engineering work often leads to short-term retiming of trains. About 32 percent of enquiries fall into this category.

w.7: Range of Fare Enquiry

Overall, 74 enquirers rang the telephone inquiries office to make 78 inquiries about the range of fares; 40 passengers approached the information desk where they made 60 inquiries about different fare categories. Table 34 shows the detailed frequency of each fare category with respect to data collection points, while Table 35 shows the relative frequency.

Location	Total	Ord Sing.	Ord Ret.	Day Ret.	W/E Ret.	Saver	Rail Card	Other	seat res
Phone	78	10	21	16	7	11	4	7	2
Desk	60	9	8	5	5	11	12	1	9
Total	138	19	29	21	12	22	16	8	11

Table 34: Frequency of Fare category at Woking station.

Locat- ion	Total	Ord Sing.	Ord Ret.	Day Ret.	W/E Ret.	Sav er	Rail Card	Other	seat re
Phone	100	12.82	26.92	20.51	8.98	14.10	5.13	8.97	2.57
Desk	100	15	13.34	8.33	8.33	18.33	20.00	1.67	15.00
Total	100	13.77	21.01	15.22	8.70	15.94	11.59	5.8	7.97

Table 35: Relative Frequency of Fare category at Woking station.

Overall, "ordinary return" is the most popular category which accounts for 21 percent. The "ordinary single"; "day return"; "Rail card" and "saver" have more or less the same magnitude accounting for between 11 and 14 percent. The rest have more or less the same magnitude, accounting for between 5.8 and 8.7 percent of all fare inquiries.

w.8: Average time taken to answer each inquiry.

Table 36 gives detailed information about the total frequency of each category of inquiries by data collection points, and the average time taken to answer it.

Location	Total		Timetable		Fare		Timetable & Fare	
	F	T	F	T	F	T	F	T
Phone	170	1.27	96	1.19	41	1.04	33	1.77
Desk	66	2.98	26	2.14	18	3.47	22	3.48
Total	236	1.75	122	1.39	59	1.78	55	2.45

Table 36: Frequency and time taken (mins) for each category at Woking station.

On average the time taken to answer any inquiry follows the same pattern as Doncaster station; but it take slightly longer. What is noteworthy is that the average enquiry take only some 105 seconds.

d.9 Conclusions from the Woking surveys

We may summarise the results of the Woking surveys as follows:

1. Nearly a half of all inquiries require fares information as well as or instead of train times.
2. Most of the enquiries relate to fairly simple journeys; no journeys involve more than two changes of train.
3. Most passengers (59%) give a desired departure time; around 6% specify that they want a through train and some 18% specify a desired arrival time.
4. 26% of inquiries relate to the same day, and a further 69% to the same week. 2% of inquiries relate to more than 14 days ahead.
5. 32% of inquiries relate to Sunday travel.
6. The mean time taken for all inquiries is some 105 seconds.

The main differences from Leeds and Doncaster are the wider range of origins and destinations encountered (particularly at the telephone bureau) and the longer time taken to answer enquiries.

CHAPTER 3

Results of the Euston surveys

In this chapter we will discuss the results of analyses of the Euston data.

The survey undertaken at Euston station consists of:

Telephone bureaux;

Date 1.11 : 2 hours morning, 2 hours afternoon, and 2 hours evening.

Date 2.11 : 2 hours afternoon, and 2 hours evening.

Date 3.11 : 2 hours morning, 2 hours afternoon, and 2 hours evening.

Information desk;

Date 17.10 : 1 hour afternoon.

Date 2.11 : 2 hours morning.

Data analyses have concentrated on the nature of these telephone bureaux and information desk inquiries. They fall into 7 broad areas: as specified in chapter 1.

Some 10% of all enquiries related to matters other than train times and fares. These have been excluded from the subsequent analysis.

e.1: Range of information.

Overall there were 521 telephone inquiries at Euston station. Table 37 illustrates the range of inquiries for different survey days while Table 38 shows their relative importance.

Date	Total	Timetable only	Fare only	Timetable and Fare
1/11	183	80	46	57
2/11	93	52	21	20
3/11	245	195	18	32
Total	521	327	85	109

Table 37: Frequency of range of information by date at Euston station. (Telephone bureaux)

Date	Total	Timetable only	Fare only	Timetable and Fare
1/11	100	43.71	25.14	31.15
2/11	100	55.91	22.58	21.51
3/11	100	79.59	7.35	13.06
Total	100	62.76	16.32	20.92

Table 38: Relative importance of range of inquiries by date at Euston station. (Telephone bureaux)

Inquiries relating to timetables only were the most numerous accounting for 63 percent of all inquiries, followed by inquiries relating to a combination of timetable and fare inquiries, which accounted for 21 percent and finally fares only which accounted for 16 percent of all inquiries.

At the information desk there were 105 inquiries overall. Table 39 details the frequency of various inquiry types for different days of the survey while Table 40 shows their relative importance. The range of inquiries at the information desk has the same pattern as telephone bureaux with more or less the same magnitude; timetable only 64 percent; a combination of timetable and fare 25 percent and fare only 11 percent.

Date	Total	Timetable	Fare	Timetable and Fare
17/10	14	3	7	4
2/11	91	64	5	22
Total	105	67	12	26

Table 39: Frequency of range of information by date at Euston station. (Information desk)

Date	Total	Timetable only	Fare only	Timetable and Fare
17/10	100	21.43	50.00	28.57
2/11	100	70.33	5.49	24.18
Total	100	63.81	11.43	24.76

Table 40: Relative importance of range of inquiries by date at Euston station. (Information desk)

Table 41 demonstrates the overall frequency distribution of range of inquiries for different information points while Table 42 shows their relative frequency. Timetable inquiries only accounted for 64 percent of all inquiries, followed by a combination of timetable and fare 25% and finally fare only accounted for 11 percent of all inquiries. 36% of all inquiries involve fares information, rather fewer than at the other stations examined so far.

Date	Total	Timetable only	Fare only	Timetable and Fare
Telephone bureaux	521	327	85	109
Information desk	105	67	12	26
Total	626	394	97	135

Table 41: Frequency of range of information by information points at Euston station.

Date	Total	Timetable only	Fare only	Timetable and Fare
Telephone bureaux	100	62.76	16.32	20.92
Information desk	100	63.81	11.43	24.76
Total	100	62.94	15.50	21.56

Table 42: Relative frequency of range of information by information points at Euston station.

e.2: Range of Origin and Destination.

Table 43 gives detailed information about the ranges of Origin and Destination in Euston station by different information points. Origins and Destinations are defined as "Euston", "local", (for detail and station names see Appendix 2) and "other".

As expected, inquiries related to long distance journeys starting at Euston station (row "Euston to Other") are the most frequent, accounting overall for 58 percent of inquiries. The passengers making such inquiries at telephone bureaux comprise 79 percent of total telephone inquiries while the same inquiries accounted for 53 percent of total inquiries at the information

desk. These results show that passengers ringing the telephone bureaux sought a wider range of Origin and destination station. (eg. other to other station in telephone bureaux is 25 percent of all inquiries while from the information desk it is 10 percent of all inquiries.

Origin	Total		Telephone bureaux		Information desk	
	F	%	F	%	F	%
Euston to Local	20	3.19	18	3.46	2	1.91
Local to Euston	11	1.76	11	2.11	0	0.0
Euston to Other	361	57.67	278	53.36	83	79.05
Other to Euston	83	13.26	73	14.01	10	9.52
Local to Local	0	0.0	0	0.0	0	0.0
Local to Other	9	1.44	9	1.73	0	0.0
Other to Local	2	0.32	2	0.38	0	0.0
Other to Other	140	22.36	130	24.95	10	9.52
Total	626	100	521	100	105	100

Table 43: Range of Origin and destination by information points at Euston station.

These tables clearly show that any information system based on journey to or from Euston station will answer 73% of all timetable inquiries at the telephone bureaux; and 90% of all inquiries at information desk. If the system is base on Euston and local overall it will answer 78% of all inquiries.

e.3: Complexity of inquiry.

The frequency of journeys involving different numbers of changes for each data collection point is given in Table 44 and its relative frequency is given in Table 45 (for difination see chapter 1). It is significant that 99% of the journeys involved no more than two changes.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Telephone bureaux	436	315	94	23	3	1
Information desk	93	73	14	5	1	0
Total	529	388	108	28	4	1

Table 44: Frequency of number of changes by data collection point at Euston station.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Telephone bureaux	100	72.25	21.56	5.27	0.69	0.23
Information desk	100	78.49	15.05	5.38	1.08	0.0
Total	100	73.34	20.42	5.29	0.76	0.19

Table 45: Relative frequency of number of changes by data collection points at Euston station.

e.4 Journey constraints

The constraints on which we collected information were discuss in chapter 1.

The frequency distribution of journey constraints for each data collection point is given in Table 46, and its relative frequency is given in Table 47.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraint
Phone *	436	251	38	4	5	10	1	127
Desk *	93	80	2	0	0	2	0	9
Total	529	331	40	4	5	12	1	136

Table 46: Frequency of constraint by data collection points at Euston station.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraints
Phone *	100	57.57	8.71	0.92	1.15	2.29	0.23	29.13
Desk *	100	86.02	2.15	0.0	0.0	2.15	0.0	9.68
Total	100	62.57	7.56	0.75	0.95	2.27	0.19	25.71

Table 47: Relative frequency of constraint by data collection points at Euston station.

The "Departure time constraint" is the most numerous one accounting for 61% of all inquiries at telephone bureaux ; and 88% of all inquiries at information desk. Around 3% of passengers specifically requested a through train; 9% specified arrival time constraints.

In contrast to our experience elsewhere Table 11 shows that those passengers making inquiries by attending the information desk constrained their inquiries more than those making inquiries by ringing telephone bureaux.

e.5: How far ahead the passengers are planning their journeys.

Table 48 gives detailed frequency distributions of categories of time ahead by data collection points, while table 49 shows their relative frequency.

Location	Total	Same day	next day	Within				
				2-4 day	5-7 day	8-10 day	11-14 day	15+ day
Phone*	175	163	8	0	0	1	1	2
Desk*	86	65	1	14	6	0	0	0
Total	261	228	9	14	6	1	1	2
				29		2		

Table 48: Frequency distribution of categories of time ahead by data collection point at Euston tation.

Location	Total	Same day	next day	Within				
				2-4 day	5-7 day	8-10 day	11-14 day	15+ day
Phone*	100	93.14	4.57	0.0	0.0	0.57	0.57	1.15
Desk*	100	75.58	1.16	16.28	6.98	0.0	0.0	0.0
Total	100	87.36	3.45	5.36	2.30	0.38	0.38	0.77
				11.11		0.76		

Table 49: Relative frequency distribution of catagorys of time ahead by data collection point at Euston.

At the information desk, same day timetable inquiries were the most frequent accounting for 76 percent of all inquiries, followed 2 to 4 days ahead which accounted for 16 percent. But at the telephone bureaux timetable inquiries referring to same day, is the sole important one for 93 percent of all telephone inquiries.

Overall, same day timetable inquiries accounted for 87 percent of all timetable inquiries, within next week timetable inquiries accounted for a further 11 percent of all timetable inquiries, and more than 8 days ahead accounted for 2 percent.

e.6: Days of the Week.

The detailed frequency distribution of days of the week about which the passengers are making inquiries with respect to data collection points are presented in Table 50, and their relative frequency distribution are presented in Table 51.

Locat- ion	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
Phone	243	9	4	5	17	48	63	67	30
Desk	9	1	0	0	0	2	3	3	0
Total	252	10	4	5	17	50	66	70	30

Table 50: Frequency distribution of weekdays by data collection points at Euston station.

Locat- ion	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
Phone	100	3.70	1.65	2.06	6.99	19.75	25.93	27.57	12.35
Desk	100	11.11	0.0	0.0	0.0	22.23	33.33	33.33	0.0
Total	100	3.97	1.59	1.98	6.75	19.84	26.19	27.78	11.90

Table 51: Relative frequency distribution of week days by data collection points at Euston station.

e.7: Range of Fare Enquiry

Overall, 194 enquirers rang the telephone inquiries office to make 255 inquiries about the range of fares; 38 passengers approached the information desk where they made 45 inquiries about different fare categories. Table 52 shows the detailed frequency of each fare category with respect to data collection points, while Table 53 shows the relative frequency.

Locat- ion	Total	Ord :Sing.	Ord :Ret.	Day :Ret.	W/E :Ret.	Sav er	Rail :Card	Other	seat :res
Phone	255	37	57	34	23	70	15	5	14
Desk	45	6	7	3	6	16	3	2	2
Total	300	43	64	37	29	86	18	7	16

Table 52: Frequency of Fare category at Euston station.

Locat- ion	Total	Ord :Sing.	Ord :Ret.	Day :Ret.	W/E :Ret.	Sav er	Rail :Card	Other	seat :res
Phone	100	14.51	22.35	13.34	9.02	27.45	5.88	1.96	5.49
Desk	100	13.33	15.56	6.67	13.33	35.56	6.67	4.44	4.44
Total	100	14.33	21.33	12.33	9.67	28.67	6.0	2.34	5.33

Table 53: Relative Frequency of Fare category at Euston station.

Overall, "saver" and "ordinary return" are the most popular categories which account for 29 percent and 21 percent of all fare inquiries respectively, These follow by "ordinary single" 14 percent; "day return" 12 percent and "weekend return" 10 percent.

d.8: Average time taken to answer each inquiry.

Table 54 gives detailed information about the total frequency of each category of inquiries by data collection points, and the average time taken to answer it.

Location	Total		Timetable		Fare		Timetable & Fare	
	F	T	F	T	F	T	F	T
Phon	521	1.08	327	0.92	85	1.32	109	1.34
Desk	105	0.82	67	0.61	12	1.74	26	0.95
Total	626	1.03	394	0.87	97	1.37	135	1.26

Table 54: Frequency and time taken for each category at Euston station.

As we expected on average the time taken to answer any inquiry follows the same pattern as Doncaster and Woking. What is noteworthy is that the average enquiry appears to take only some 61 seconds.

d.9 Conclusions from the Euston surveys

We may summarise the results of the Euston surveys as follows:

1. Nearly 36% of all inquiries require fares information as well as or instead of train times.
2. Most of the enquiries relate to fairly simple journeys; only 1% involve more than two changes of train.
3. Most passengers (66%) give a desired departure time; around 3% specify that they want a through train and some 9% specify a desired arrival time.
4. 87% of inquiries relate to the same day, and a further 11% to the same week. 1% of inquiries relate to more than 8 days ahead.
5. 28% of inquiries relate to Sunday travel.
6. The mean time taken for all inquiries is some 61 seconds.

The one surprise is again the large number of 'other-to-other' enquiries, particularly on the telephone, although this is not as prevalent as at Woking.

CHAPTER 4

Results of the Halifax surveys

In this chapter we will discuss the results of analyses of the Halifax data.

The surveys undertaken at Halifax station consist of, 3 days each day 2 hours at ticket office.

Data analyses have concentrated on the nature of these inquiries. They fall into 7 broad areas: as specified in chapter one.

Some 3% of all enquiries related to matters other than train times and fares. These have been excluded from the subsequent analysis.

h.1: Range of information.

Overall there were 111 inquiries at Halifax station. Table 55 illustrates the range of inquiries for different survey days while Table 56 shows their relative importance.

Date	Total	Timetable only	Fare only	Timetable and Fare
16/10	28	12	7	9
19/10	45	25	6	14
24/10	38	22	1	15
Total	111	59	14	38

Table 55: Frequency of range of information by date at Halifax station.

Date	Total	Timetable only	Fare only	Timetable and Fare
16/10	100	42.86	25.00	32.14
19/10	100	55.56	13.33	31.11
24/10	100	57.89	2.63	39.48
Total	100	53.15	12.61	34.24

Table 56: Relative importance of range of inquiries by date at Halifax station.

Inquiries relating to timetables only were the most numerous accounting for 54 percent of all inquiries, followed by inquiries relating to a combination of timetable and fare inquiries, which accounted for 34 percent and finally fares only which accounted for 12 percent of all inquiries. It is significant that again nearly a half of all enquiries involve fares information.

h.2: Range of Origin and Destination.

Table 57 gives detailed information about the ranges of Origin and Destination in Halifax station. Origins and Destinations are defined as "Halifax", "local", (for detail and station names see Appendix 2) and "other".

Origin	F	%
Halifax To Local	27	24.33
Local to Halifax	3	2.70
Halifax to Other	57	51.35
Other to Halifax	11	9.91
Local to Local	1	0.90
Local to Other	8	7.21
Other to Local	1	0.90
Other to Other	3	2.70
Total	111	100

Table 57: Range of Origin and destination at Halifax station.

As expected, inquiries related to long distance journeys starting at Halifax station (row "Halifax to Other") are the most frequent, accounting overall for 51 percent of inquiries.

Were a computerised information system only able to deal with journeys to or from Halifax station, this sort of system will give answers to 88 percent of all inquiries. If the passenger information system is based on Halifax and Local stations, it will answer 97 percent of all inquiries at Halifax station.

d.3: Complexity of inquiry.

The frequency of journeys involving different numbers of changes and its relative frequency is given in Table 58. (for definition see chapter 1) As expected 79% of all journeys related to through train, and 97% of the journeys involved no more than two changes.

Data Collection point	Total	Number of changes				
		0	1	2	3	4
Frequency	97	77	10	7	3	0
Percentage	100	79.38	10.31	7.22	3.09	0.0

Table 58: Frequency and Relative frequency of number of changes at Halifax station.

h.4: Journey constraints

The constraints on which we collected information were discuss in chapter 1.

The frequency distribution of journey constraints and its relative frequency is given in Table 59.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraint
Frequency	97	61	6	1	0	2	0	27
Percent	100	62.89	6.19	1.03	0	2.06	0	27.83

Table 59: Frequency and Relative frequency of constraint at Halifax station.

Overall inquiries relating to constrained journeys accounted for 72 percent of all timetable inquiries, and departure time constraint is the most numerous one accounting for 65 percent of all timetable inquiries. Around 3% of passengers specifically requested a through train; 6% specified arrival time constraints.

h.5: How far ahead the passengers are planning their journeys.

Table 60 gives detailed frequency distributions of categories of time ahead and their relative frequency.

	Total	Same day	next day	Within					15+ day
				2-4 day	5-7 day	8-10 day	11-14 day		
Frequency	60	27	14	9	7	1	0	2	
Percent	100	45.0	23.33	15.00	11.67	1.67	0.0	3.33	
Frequency		27		30		1		2	
Percent		45.0		50.00		1.67		3.33	

Table 60: Frequency and Relative frequency distribution of categories of time ahead at Halifax station.

At Halifax station, same day timetable inquiries were the most frequent accounting for 45 percent of all inquiries, followed by next day timetable inquiries which accounted for 23 percent; 2 to 4 days ahead which accounted for 15 percent. Overall, 95% of all inquiries related to the same week, and 5 percent of all timetable inquiries related to more than 8 days ahead.

h.6: Days of the Week.

The detailed frequency distribution of days of the week about which the passengers are making inquiries and their relative frequency distribution are presented in Table 61.

Location	Total	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mid week
F	33	2	0	0	1	1	4	6	19
%	100	6.06	0.0	0.0	3.03	3.03	12.12	18.18	57.58

Table 61: Frequency and Relative frequency distribution of week days at Halifax station.

h.7: Range of Fare Enquiry

Overall, 52 enquirers approached the Halifax station to make 66 inquiries about different fare categories. Table 62 shows the detailed frequency of each fare category and their relative frequency.

	Total	Ord Sing.	Ord Ret.	Day Ret.	W/E Ret.	Sav er	Rail Card	Other	seat res
F	66	12	16	12	3	10	3	2	8
%	100	18.18	24.24	18.18	4.55	15.15	4.55	3.03	12.12

Table 62: Frequency and Relative Frequency of Fare category at Halifax station.

Overall, "ordinary return" is the most popular category which accounts for 24 percent of all fare inquiries, followed by "ordinary single" and "day return" each accounting for 18% of all fares inquiries.

h.8: Average time taken to answer each inquiry.

Table 63 gives detailed information about the total frequency of each category of inquiries and the average time taken to answer it.

Location	Total		Timetable		Fare		Timetable & Fare	
	F	T	F	T	F	T	F	T
Ticket Office	111	0.47	59	0.44	14	0.57	38	0.49

Table 63: Frequency and time taken (mins) for each category at Halifax station.

At Halifax, the average enquiry took only 30 seconds.

d.9 Conclusions from the Halifax surveys

We may summarise the results of the Halifax surveys as follows:

1. Nearly a half of all inquiries require fares information as well as or instead of train times.
2. Most of the enquiries relate to fairly simple journeys; only 3% involve more than two changes of train.
3. Most passengers (65%) give a desired departure time; around 3% specify that they want a through train and some 6% specify a desired arrival time.
4. 45% of inquiries relate to the same day, and a further 50% to the same week. 5% of inquiries relate to more than 8 days ahead.
5. 18% of inquiries relate to Sunday travel.
6. The mean time taken for all inquiries is some 35 seconds.

This very fast time may be partly explained by the fact that a greater proportion of enquiries at Halifax referred to local journeys.

CHAPTER 5

Results of the Gatwick surveys

In this chapter we will discuss the results of analyses of the Gatwick data.

The survey undertaken at Gatwick station consisted of 3 days, each day 2 hours at information desk.

Data analyses have concentrated on the nature of these inquiries. They fall into 7 broad areas: as specified in chapter one.

Some 8% of all enquiries related to matters other than train times and fares. These have been excluded from the subsequent analysis.

g.1: Range of information.

Overall there were 76 inquiries at Gatwick station. Table 64 illustrates the range of inquiries for different survey days while Table 65 shows their relative importance.

Date	Total	Timetable only	Fare only	Timetable and Fare
23/10	32	16	10	6
26/10	24	18	3	3
27/10	20	11	5	4
Total	76	45	18	13

Table 64: Frequency of range of information by date at Gatwick station.

Date	Total	Timetable only	Fare only	Timetable and Fare
23/10	100	50.00	31.25	18.75
26/10	100	75.00	12.50	12.50
27/10	100	55.00	25.00	20.00
Total	100	59.21	23.68	17.11

Table 65: Relative importance of range of inquiries by date at Gatwick station.

g.2: Range of Origin and Destination.

Table 66 gives detailed information about the ranges of Origin and Destination in Gatwick station. Origins and Destinations are defined as "Gatwick", "local", (for detail and station names see Appendix 2) and "other".

Origin	Total	
	F	%
Gatwick To Local	4	5.26
Local to Gatwick	2	2.63
Gatwick to Other	44	57.89
Other to Gatwick	1	1.32
Local to Local	0	0.0
Local to Other	0	0.0
Other to Local	0	0.0
Other to Other	25	32.90
Total	76	100

Table 66: Range of Origin and destination at Gatwick station.

As expected, inquiries related to long distance journeys starting at Gatwick station (row "Gatwick to Other") are the most frequent, accounting overall for 58 percent of inquiries.

Were a computerised information system only able to deal with journeys to or from Gatwick station, this sort of system will give answers to 67 percent of all inquiries. This result shows that a wider range of origins and destinations is important at Gatwick station

g.3: Complexity of inquiry.

The frequency of journeys involving different numbers of changes and its relative frequency is given in Table 67. (for definition see chapter 1)

Data	Collection point	Total	Number of changes				
			0	1	2	3	4
Frequency	58	36	12	8	2	0	
Percentage	100	62.07	20.69	13.79	3.45	0.0	

Table 67: Frequency and Relative frequency of number of changes at Gatwick station.

As expected 62% of all journeys related to through train, and 94% of all journeys involved no more than two changes.

g.4 Journey constraints

The constraints on which we collected information were discussed in chapter 1.

The frequency distribution of journey constraints and its relative frequency is given in Table 68.

Location	Total	Dep	Arr	Thr	Dep & Arr	Dep & Thr	Arr & Thr	No constraint
Frequency	58	36	3	3	0	3	0	13
Percent	100	62.07	5.17	5.17	0	5.17	0	22.42

Table 68: Frequency and Relative frequency of constraint at Gatwick station.

At the Gatwick station overall inquiries relating to constrained journeys accounted for 78 percent of all timetable inquiries, and departure time constraint is the most numerous one accounting for 67 percent of all timetable inquiries. In addition, around 10% of passengers specifically requested a through train; 5% specified arrival time constraints.

g.5: How far ahead the passengers are planning their journeys.

Table 69 gives detailed frequency distributions of categories of time ahead and their relative frequency.

: Locat- : ion	: Total	: Same : day	: next : day	: Within				
				: 2-4 : day	: 5-7 : day	: 8-10 : day	: 11-14 : day	: 15+ : day
: Frequency	: 33	: 27	: 2	: 1	: 0	: 0	: 0	: 3
: Percent	: 100	: 81.82	: 6.06	: 3.03	: 0.0	: 0.0	: 0.0	: 9.09
: Frequency				: 3		: 0		: 3
: Percent				: 9.09		: 0.0		: 9.09

Table 69: Frequency and Relative frequency distribution of Categories of time ahead at Gatwick tation.

Overall, at Gatwick station same day timetable inquiries accounted for 82 percent of all timetable inquiries, within next week timetable inquiries accounted for a further 9 percent and more than 14 days ahead accounted for 9 percent.

g.6: Days of the Week.

The detailed frequency distribution of days of the week about which the passengers are making inquiries and their relative frequency are presented in Table 70.

	: Total	: Mon	: Tue	: Wed	: Thu	: Fri	: Sat	: Sun	: Mid : week
: F	: 8	: 2	: 1	: 0	: 0	: 1	: 1	: 2	: 1
: %	: 100	: 25.0	: 12.5	: 0.0	: 0.0	: 12.5	: 12.5	: 25.0	: 12.5

Table 70: Frequency and Relative frequency distribution of week days at Gatwick station.

g.7: Range of Fare Enquiry

Overall, 31 inquirers approached the Gatwick station where they made 34 inquiries about different fare categories. Table 71 shows the detailed frequency of each fare category and their relative frequency.

Locat- ion	Total	Ord Sing.	Ord Ret.	Day Ret.	W/E Ret.	Sav er	Rail Card	Other	seat res
F	34	7	5	5	2	2	3	2	8
%	100	20.59	14.71	14.71	5.88	5.88	8.82	5.88	23.53

Table 71: Frequency and Relative Frequency of fare category at Gatwick station.

Overall, "ordinary single" is the most popular category which accounts for 21 percent of all fare inquiries, follow by "ordinary return" and "day return" each accounting for between 14.71 percent of all fare inquiries. The rest have more or less the same magnitude, accounting for between 5.88 and 8.82 percent; except combination of seat reservation and fares which accounted for 24 percent of all fare inquiries.

g.8: Average time taken to answer each inquiry.

Table 72 gives detailed information about the total frequency of each category of inquiries and the average time taken to answer it.

Location	Total		Timetable		Fare		Timetable & Fare	
	F	T	F	T	F	T	F	T
Desk	76	3.32	45	1.83	18	4.43	13	7.68

Table 72: Frequency and time taken for each category at Gatwick station.

What is noteworthy is that overall the average inquiry appears to take some 3.3 minutes; while timetable inquiries take around 2 minutes; fare inquiries take around 4 minutes; and a combination of timetable and fare take around 7 minutes. Judging by the comparison between this figure and our experience at other

stations, it would appear that at Gatwick station it takes longer to answer. This is partly because the timetable and fare inquiry and seat reservation are served by the same clerks at Gatwick station.

d.9 Conclusions from the Gatwick surveys

We may summarise the results of the Gatwick surveys as follows:

1. 41% of all inquiries require fares information as well as or instead of train times.
2. Most of the enquiries relate to fairly simple journeys; only 3.45% involve more than two changes of train.
3. Most passengers (67%) give a desired departure time; around 10% specify that they want a through train and some 5% specify a desired arrival time.
4. 82% of inquiries relate to the same day, and a further 9% to the same week. 9% of inquiries relate to more than 14 days ahead.
5. 25% of inquiries relate to Sunday travel.
6. The mean time taken for all inquiries is some 3.32 minutes.

This is much slower than at the other stations. But again, a wider range of origins and destinations than at Leeds is involved.