

# TRICS

**REPORT 92/2**

## **TRAFFIC IMPLICATIONS OF SUNDAY TRADING**

# **TRICS Research Report**

## **Traffic Implications of Sunday Trading December 1991**

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# 1 Introduction

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- 1.1 In the run-up to the 1991 Christmas, all the leading food retailers decided to operate seven day trading. The decision was first announced by Tesco in mid-November and all the other retailers quickly followed suite. Most superstores were operating on Sundays by the first week in December. This led to a great amount of publicity which added to the demand in subsequent weeks.
- 1.2 In late November the TRICS Counties decided to monitor the trip generation of a range of superstores throughout the Christmas period and to compare the results with data already held for previous years. This report draws together the results of this analysis.
- 1.3 During 1989 and 1990 the group of seven south-eastern county councils undertook a research exercise to monitor traffic at a number of superstores for a complete year in order to be able to determine seasonal variation (Ref: TEC "Seasonal and Daily Variation in Travel to Retail Stores", Traffic Engineering Control, February 1991) In order to be able to undertake this project Automatic Traffic Counters (ATC) had been installed at nine different food retail outlets and directional data had been obtained on an hourly basis throughout the year.
- 1.4 In order to monitor the effect of the seven day trading, the counties re-installed the ATCs at seven of the previous nine sites for the whole of December. The seven sites were:
- |   |           |              |             |
|---|-----------|--------------|-------------|
| ■ | Asda      | Burgh Heath  | Surrey      |
| ■ | Asda      | Fareham      | Hampshire   |
| ■ | Sainsbury | Burpham      | Surrey      |
| ■ | Sainsbury | Chichester   | West Sussex |
| ■ | Sainsbury | Poole        | Dorset      |
| ■ | Tesco     | Bognor Regis | Sussex      |
| ■ | Tesco     | Hookwood     | Surrey      |
- Full details of each of the sites are set out in Table 1.1.
- 1.5 For some sites it was possible to compare three years out of 1988, 1989, 1990 and 1991, while for others it was possible to compare either 1989 with 1991 or 1990 with 1991. For some sites it was necessary to undertake some patching of data but this was kept to an absolute minimum.
- 1.6 Most of the surveyed sites have continued Sunday trading into 1992 but this report has not considered this aspect as only limited data is currently available.

**Table 1.1 Site Characteristics**

Operator	Location	GFA m <sup>2</sup>	RFA m <sup>2</sup>	No of Parking Spaces	Area	Opened
Asda	Burgh Heath, Surrey	7,618	4,088	659	Edge of Town	1989
Asda	Fareham, Hampshire	8,500	4,200	700	Industrial Zone	1988
Sainsbury	Burpham, Surrey	5,667	3,530	620	Suburban Area	1985
Sainsbury	Chichester, W Sussex	5,037	2,641	525	Edge of Town	1985
Sainsbury	Poole, Dorset	6,968	3,919	630	Suburban Area	1990
Tesco	Bognor Regis, W Sussex	6,300	3,400	559	Industrial Zone	1988
Tesco	Hookwood, Surrey	7,350	4,400	700	Edge of Town	1986

## 2 Traffic Patterns

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### Total Monthly Traffic Flows

2.1 Table 2.1 sets out the total monthly flows for the four weeks in December to each of the stores for each year in terms of vehicles attracted to each site.

**Table 2.1 Monthly Traffic Flows (December)**

Site	1988	1989	1990	1991	Annual Growth Rate		
					88-91	89-91	90-91
1	-	73,000	-	102,000	-	18.2%	-
2	-	75,000	-	92,000	-	11.0%	-
3	116,000	113,000	-	120,000	1.0%	3.0%	-
4	-	-	97,000	120,000	-	-	23.7%
5	-	-	59,000 <sup>(1)</sup>	75,000	-	-	27.0% <sup>(2)</sup>
6	-	96,000	-	117,000	-	10.3%	-
7	114,000	118,000	-	109,000	-1.5%	-3.7%	-

**Key:**

- 1 Asda, Burgh Heath
- 2 Asda, Fareham
- 3 Sainsbury, Burpham
- 4 Sainsbury, Chichester
- 5 Sainsbury, Poole
- 6 Tesco, Bognor Regis
- 7 Tesco, Hookwood

**Notes:**

- (1) Based on weeks 2 - 4 only
- (2) Based on weeks 2 - 4 only

2.2 It will be seen that at all sites other than Tesco at Hookwood the traffic has increase over the period. Such increases probably arise from a number of different causes including:

- i) large increases in the first few years of a store opening, for instance:
  - . Asda, Burgh Heath opened in 1989
  - . Sainsbury, Poole opened in 1990.
- ii) natural growth in trip generation characteristics
- iii) the addition of Sunday trading

2.3 Very little is currently known about the natural growth in trip generation rates but the effect of Sunday trading is set out in the rest of this report.

2.4 Table 2.2 repeats the presentation of Table 2.1 but includes information for comparable six day trading periods only (i.e. excluding the Sunday).

**Table 2.2 Monthly Six Day Traffic Flows (December)**

Site	1988	1989	1990	1991	Annual Growth Rate		
					88-91	89-91	90-91
1	-	73,000	-	88,000	-	10.0%	-
2	-	75,000	-	80,000	-	3.5%	-
3	115,000	111,000	-	115,000	1.0%	0%	-
4	-	-	96,000	109,000	-	-	13.5%
5	-	-	58,000 <sup>(1)</sup>	67,000	-	-	15.5% <sup>(2)</sup>
6	-	93,000	-	103,000	-	5.2%	-
7	113,000	117,000	-	106,000	-2.0%	-4.6%	-

**Key:**

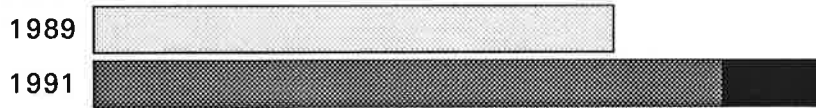
- 1 Asda, Burgh Heath
- 2 Asda, Fareham
- 3 Sainsbury, Burpham
- 4 Sainsbury, Chichester
- 5 Sainsbury, Poole
- 6 Tesco, Bognor Regis
- 7 Tesco, Hookwood

**Notes:**

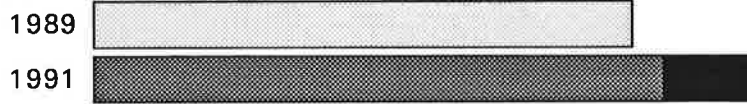
- (3) Weeks 2 - 4 only
- (4) Based on weeks 2 - 4 only

2.5 These figures illustrate that even on the basis of six day trading there has generally been a growth in trip generation levels and the extra Sunday trading has added to the overall level of activity. This can be clearly illustrated in Figure 2.1. The traffic to Tesco Hookwood store is the one site where a different pattern emerges and the traffic has gone down during the period of analysis. This was probably caused by the opening of a major new Sainsbury Store in the locality. However, the traffic to the Sainsbury site at Burpham has continued to increase, albeit at a lower rate, despite the introduction of two new stores within its catchment area.

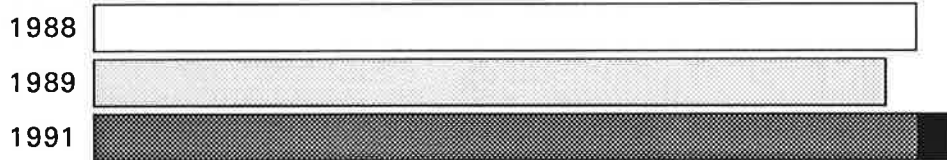
**ASDA BURGH HEATH**



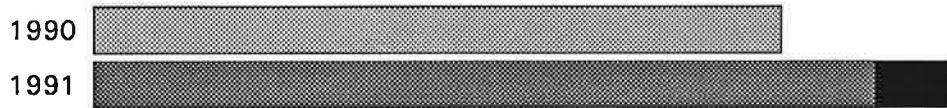
**ASDA FAREHAM**



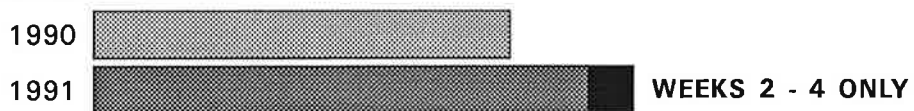
**SAINSBURY BURPHAM**



**SAINSBURY CHICHESTER**



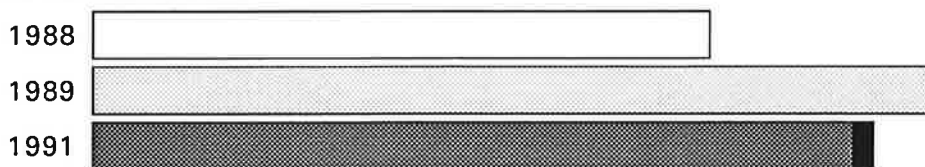
**SAINSBURY POOLE**



**TESCO BOGNOR REGIS**



**TESCO HOOKWOOD**



1988
  1989
  1990
  1991
  SUNDAY TRADE



- 2.6 Taking all of the information available, the data suggests that traffic to the superstore has increased over the last few years at an average rates of 10% per annum. If the Sunday trading is ignored, the data suggests that traffic on the remaining 6 days has increased by some 4-5% per annum. It needs to be recognised that this is a small and unrepresentative sample of these figures and should be used with caution.
- 2.7 Figure 2.2 presents for each site the trip generation levels on a weekly basis in the run up to the Christmas period. In all cases week 3 (which is the week immediately prior to Christmas) is the busiest week, while week 4, which includes the two closed days of Christmas and Boxing Day, exhibits the lowest level of activity.
- 2.8 Some indication of the build up to Christmas can be gained by comparing the percentage of trade in each of the four week periods in 1991 averaged over all available data (Table 2.3). From this it will be seen that there is little difference in the traffic in weeks one and two but there is clearly an increase in the week immediately prior to Christmas, but a fall off in the post-Christmas period. However, it should be noted that the effect is not as marked as one might have expected.

**Table 2.3 Traffic by Week of Month  
(December 1991)**

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Week 1	25.4
Week 2	26.5
Week 3	27.7
Week 4	20.4

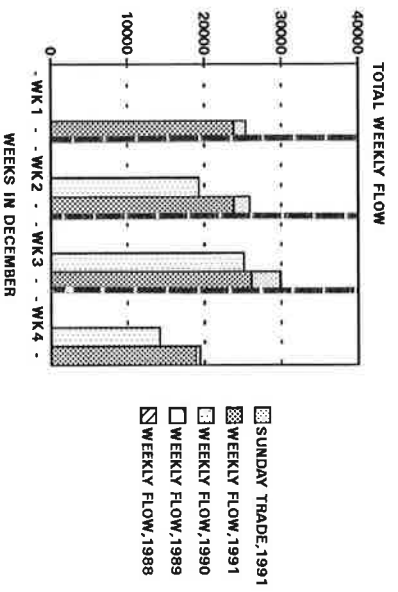
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- 2.9 The trend in Sunday traffic levels throughout the four week period generally follows the same pattern but with a slower start and higher peak as customers become familiar with the system.

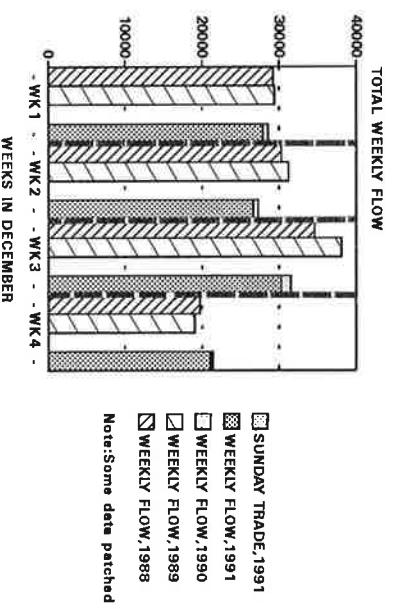
### **Traffic Flow by Day of Week**

- 2.10 Details of the traffic flows on each day of each week are given for each store in the Appendix to this report. The data is presented in three ways, namely:
- i) trips per day
  - ii) percentage of the weekly traffic by day
  - iii) percentage of the six day week traffic by day.

## SAINSBURY POOLE



## TESCO HOOKWOOD



## TESCO BOGNOR REGIS

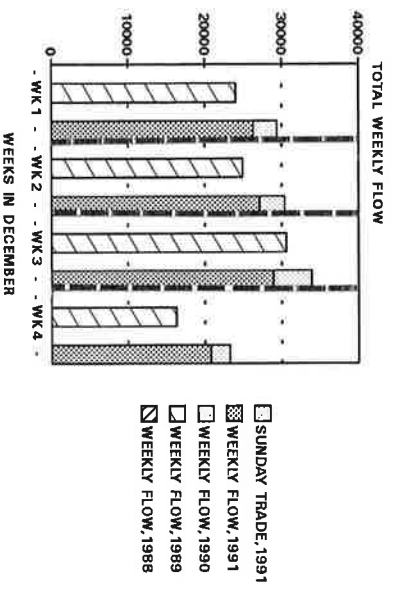
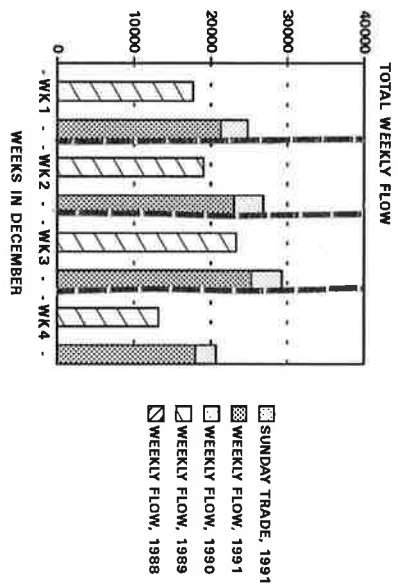
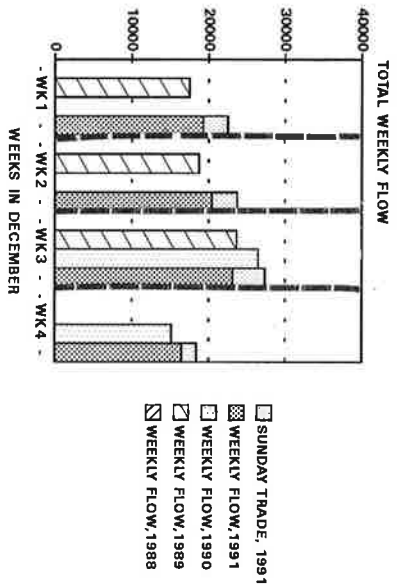


Figure 2.2

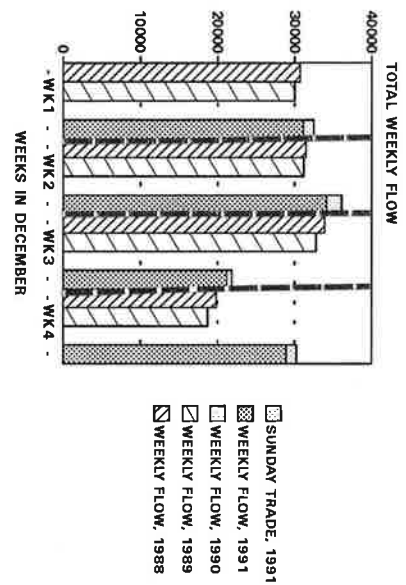
### ASDA BURGH HEATH



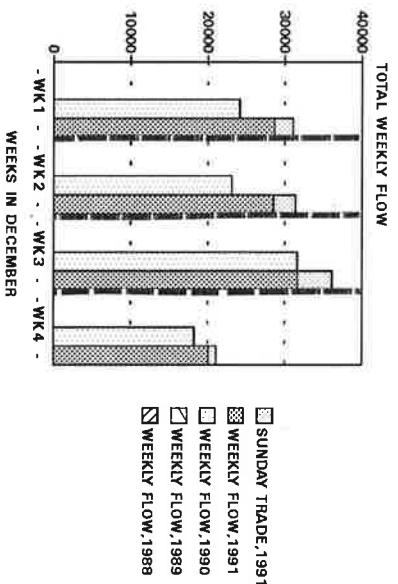
### ASDA FAREHAM



### SAINSBURY BURPHAM



### SAINSBURY CHICHESTER



WEEKLY FLOWS 1988 - 1991  
FROM ALL SEVEN SITES

Figure 2.2

- 2.11 It is the third form of presentation that is the most revealing as it enables direct comparisons of the weekly distribution of trips to be made between those years when stores did and did not have Sunday trading. (In the presentation, the Monday to Saturday traffic figures are assumed to add to 100% and the Sunday traffic adds a further percentage). Figure 2.3 brings together all the week 2 data from each site onto a single presentation.
- 2.12 The data illustrates that over the last few years there has been a flattening of the weekly distribution of traffic with some small increase in the percentage of traffic on Monday and Tuesdays with corresponding decreases in the percentage of traffic using the store on a Saturday. It is not clear whether the small decline in the percentage of traffic using the Store on a Saturday arises from the traffic which is now attracted to the store on a Sunday or whether it is due to the increase activity at the beginning of the week.
- 2.13 It needs to be noted that although there has been a small percentage decline of Saturday trade the actual level of activity has increase (albeit not at the same rate as for other days of the week).
- 2.14 The level of Sunday activity at each of the seven sites varied enormously as illustrated in Table 2.4 (based on week 2 data).

**Table 2.4 Percentage of Week's Traffic on a Sunday  
(Based on Week 2 1991)**

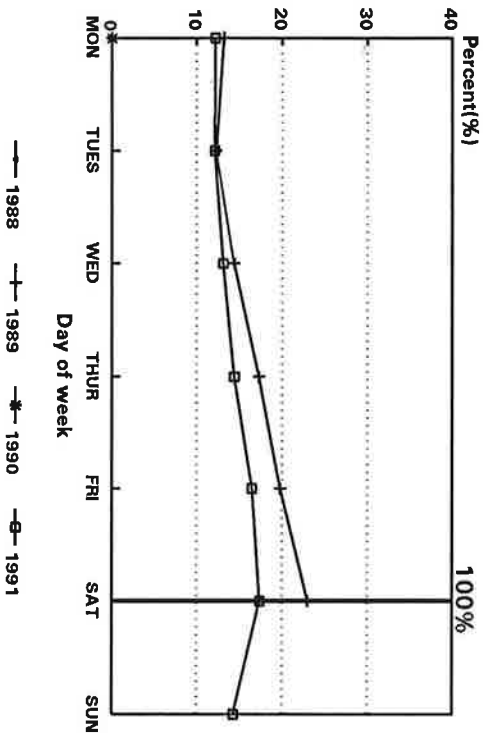
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Asda, Burgh Heath	16.0%
Asda, Fareham	14.0%
Sainsbury, Burpham	4.3%
Sainsbury, Chichester	9.1%
Sainsbury Poole	8.4%
Tesco, Bognor Regis	11.8%
Tesco, Hookwood	2.7%

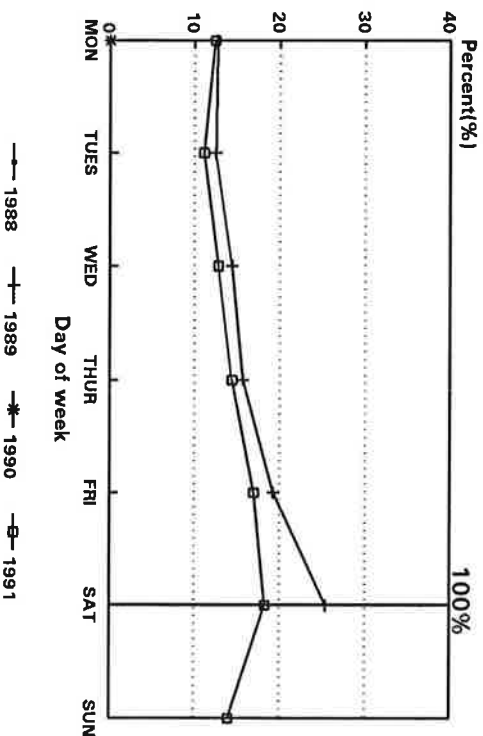
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- 2.15 The data tends to suggest that it is those stores, such as Asda, that are known for retailing a wide range of non-food products that may be attracting the highest level of Sunday activity.
- 2.16 Taking all seven sites together the average distribution by day of week is as set out in Table 2.5 below. This illustrates that currently Fridays and Saturdays remain the busiest days of the week and an average the Sunday flow only equates to some 50% of the Saturday flow.

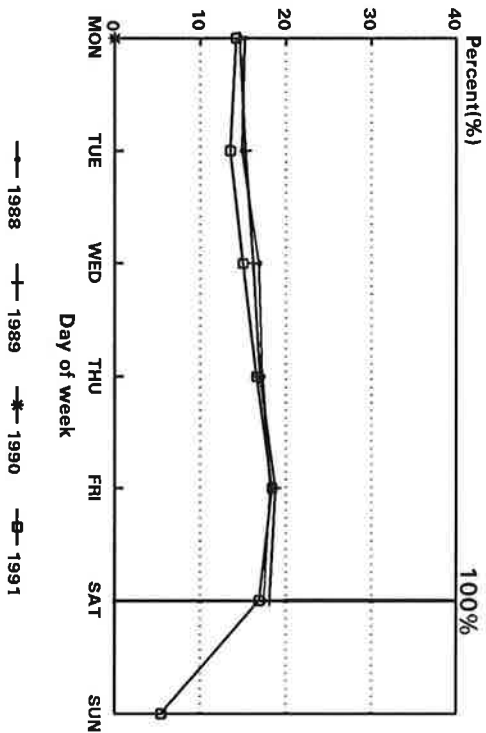
### ASDA BURGH HEATH



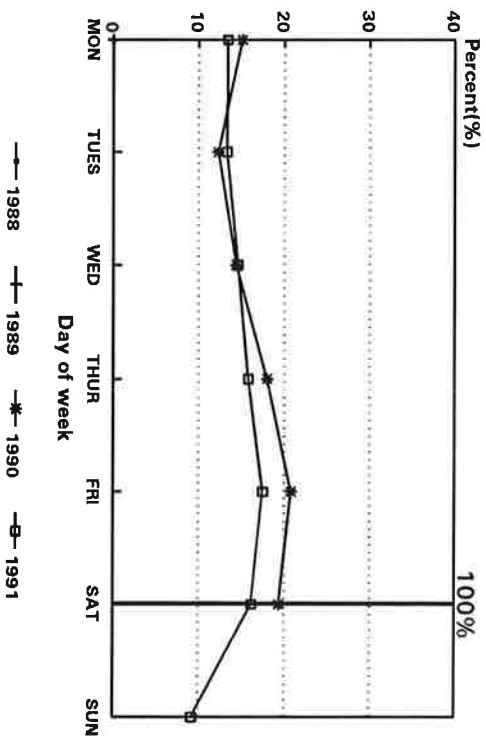
### ASDA FAREHAM



### SAINSBURY BURPHAM



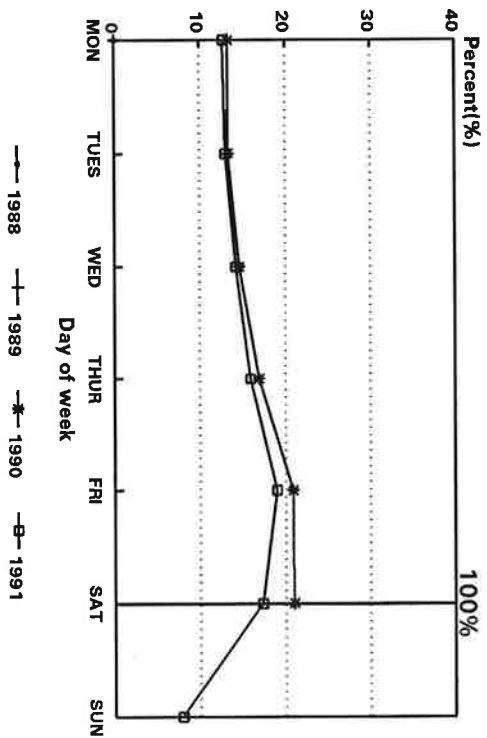
### SAINSBURY CHICHESTER



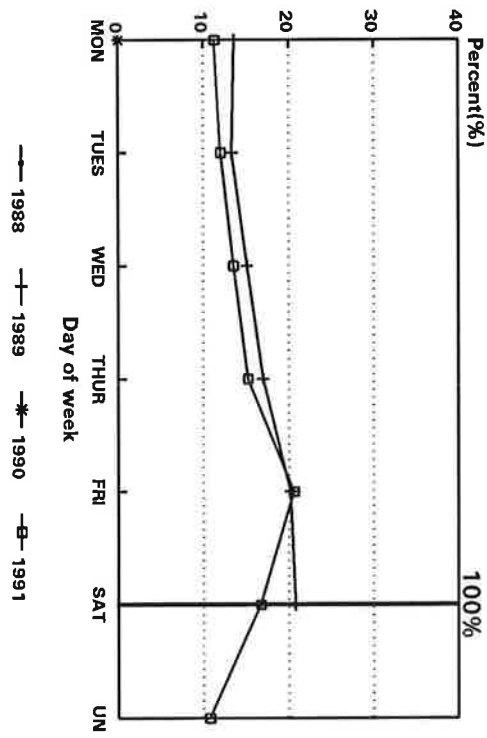
PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
FROM ALL SEVEN SITES

Figure 2.3

### SAINSBURY POOLE



### TESCO BOGNOR REGIS



### TESCO HOOKWOOD

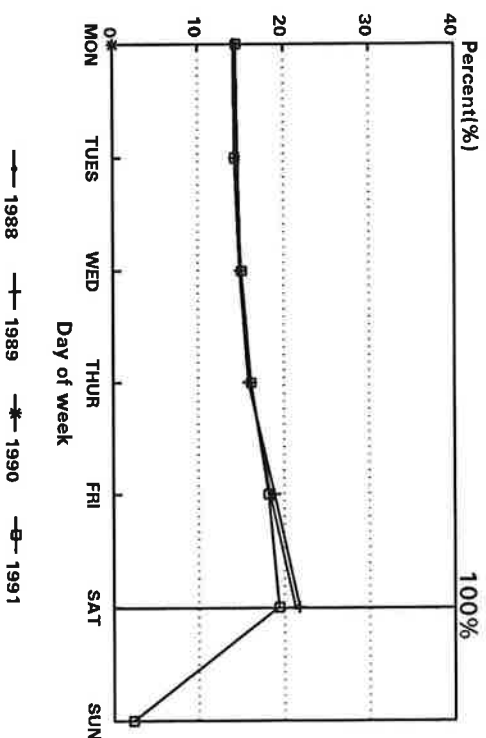


Figure 2.3

**Table 2.5 Percentage off Traffic by Day of Week 1992 (Week 2)**

Monday	13.0%
Tuesday	12.8%
Wednesday	14.1%
Thursday	15.6%
Friday	18.0%
Saturday	17.5%
Sunday	9.0%
	100.0%

### Traffic Flows on Sunday

2.17 The trip rates for traffic to the stores on a Sunday are given below:

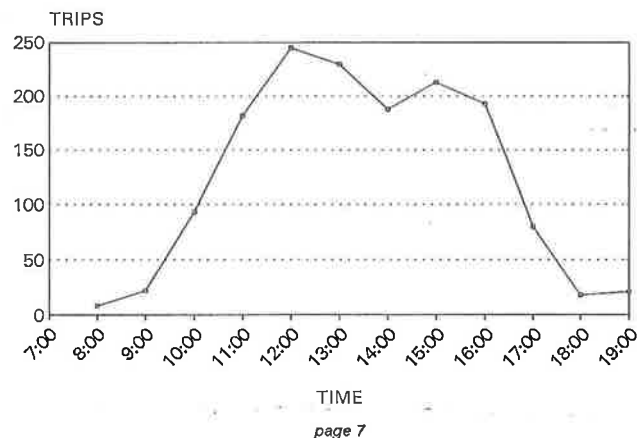
Asda, Burgh Heath	35 trips/100m <sup>2</sup> GFA
Asda, Fareham	22 trips/100m <sup>2</sup> GFA
Sainsbury, Burpham	11 trips/100m <sup>2</sup> GFA
Sainsbury, Chichester	20 trips/100m <sup>2</sup> GFA
Sainsbury, Poole	7 trips/100m <sup>2</sup> GFA
Tesco, Bognor Regis	39 trips/100m <sup>2</sup> GFA
Tesco, Hookwood	4 trips/100m <sup>2</sup> GFA

2.18 These data sets clearly present a wide variation of results which are even more diverse than the variation in the total trip attraction to the sites.

### Traffic Flows by Time of Day on a Sunday

2.19 A typical profile of inbound trips by time of day is exemplified below by Sainsbury Poole in Figure 2.4. The illustration demonstrates a peak inbound flow at noon, the hour 1100 - 1200 represents 16% of daily inbound total. The subsequent afternoon peak at 1400 - 1500 hours represents 14% of daily inbound total.

TRAFFIC FLOWS BY TIME OF DAY  
SAINSBURY POOLE



**FIGURE 2.4**

### 3 Conclusions

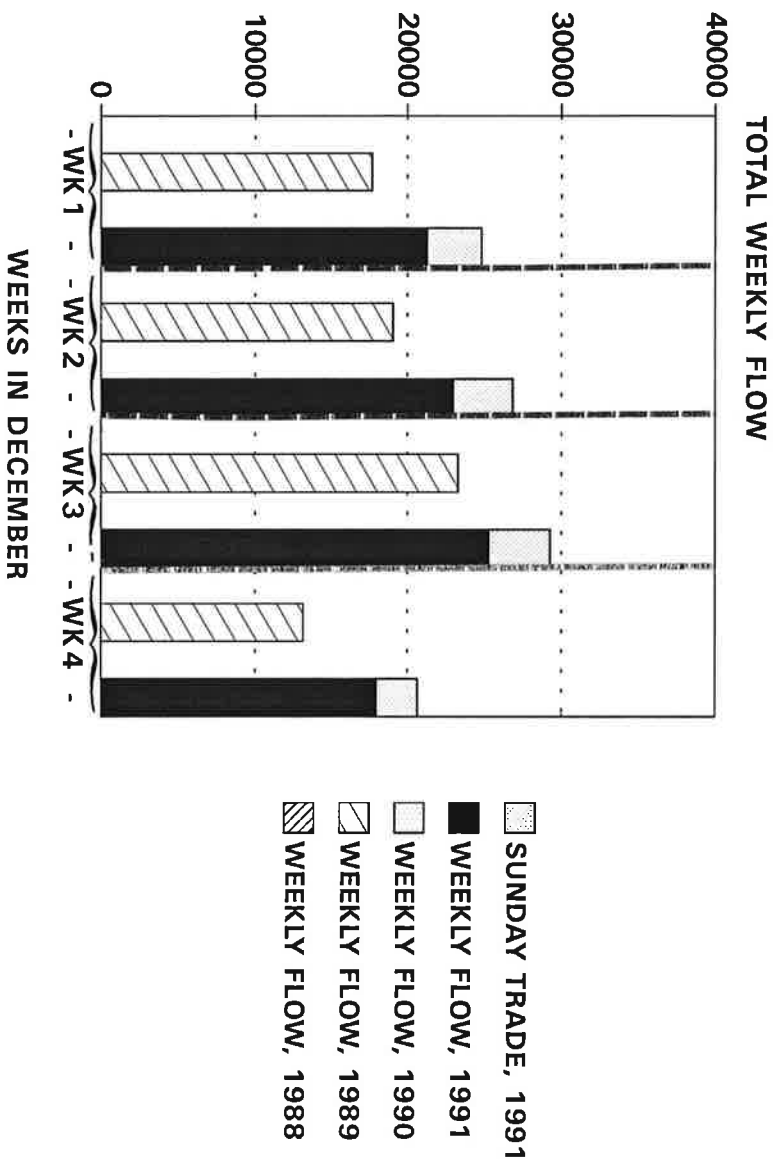
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- 3.1 The study results provide various indications of the changing pattern in the movement of traffic to retail food superstores. However, the results are at times so different between stores that any general conclusion may be difficult to make.
- 3.2 It is clear that there is a combined growth in traffic to superstores will a year by year growth rate of some 10% being experience over a range of site. At one site the traffic has gone down due to the opening of a competitor within the store's main catchment area, however, at another site major increased competition has not been sufficient to completely stem the growth in traffic generation.
- 3.3 Part of the increase in traffic may be due to the introduction of Sunday traffic, but part may arise from the growth that arises within the first year of opening of a new site. However, even if one considers only the six day trading pattern it will be noted that traffic has risen on a year by year basis by in the region of 4-5% per annum.
- 3.4 While there is a well recognised build up of traffic in the pre-Christmas period, this is not clearly seen until about week 3, i.e. the week before Christmas. Weeks 1 and 2 seem of be fairly typical weeks.
- 3.5 The effectiveness of the Sunday Trading policy seems to be very patchy with some sites attracting some 14% of their weeks trade on a Sunday, while other sites attracted only 2%. This is reflected in the Sunday trip rates at each of the sites which vary from 4 trips/100m<sup>2</sup> to 35 trips/100m<sup>2</sup> per day.
- 3.6 Taking all sites together, the Sunday traffic levels are about 50% of the Saturday levels.
- 3.7 The data illustrates a continuous changing pattern of traffic throughout the week. Comparison over the years illustrate that Monday and Tuesday are increasing in popularity while Saturdays are decreasing. It is not possible to determine whether the decline in popularity of Saturday (albeit that the number of trips is still increasing) is a function of the introduction of Sunday trading on a more fundamental shift in the distribution of traffic throughout the week.
- 3.8 It is clear, however, that the introduction of Sunday trading has not reduced the peak traffic demands of the Saturdays.
- 3.9 On a Sunday peak, traffic levels occur in the middle of the day.
- 3.10 The results provide an appraisal of the initial impact of Sunday trading, but this is very much influenced by the presence of the run up to Christmas. The initial evidence suggests that Sunday trading in England is not as popular as it is in Scotland where the Sunday is the busiest period in the week. Ad hoc data in the post Christmas period has suggested that trade has significantly dropped off and traffic flows are light. Further research would be need to verify these observations.

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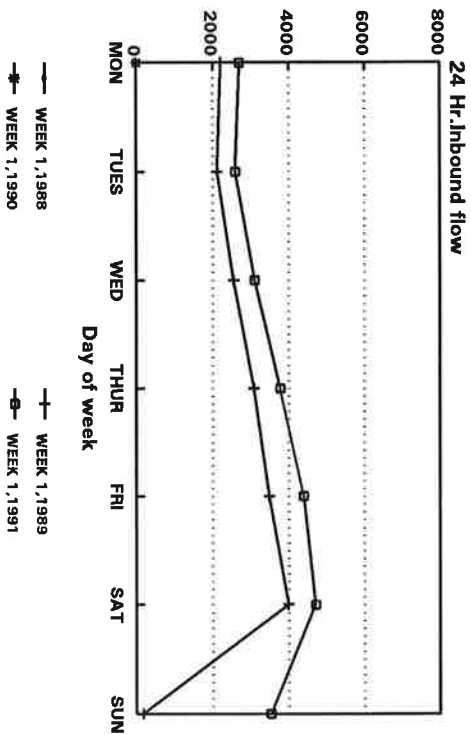
# ASDA BURGH HEATH



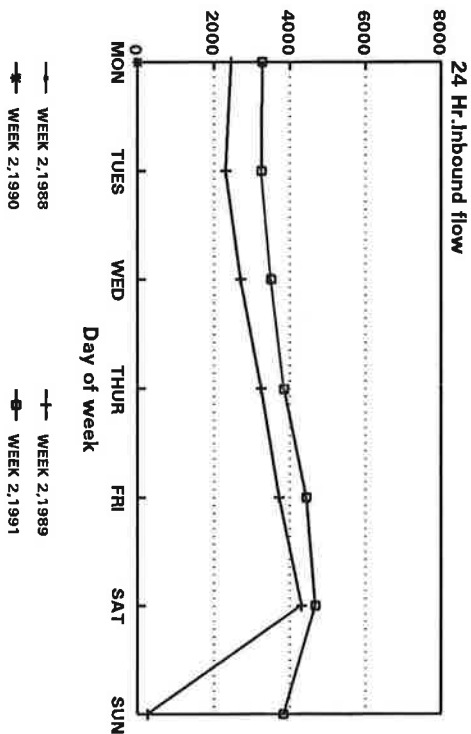
WEEKLY FLOWS 1988 - 1991  
ASDA BURGH HEATH

Figure A.1

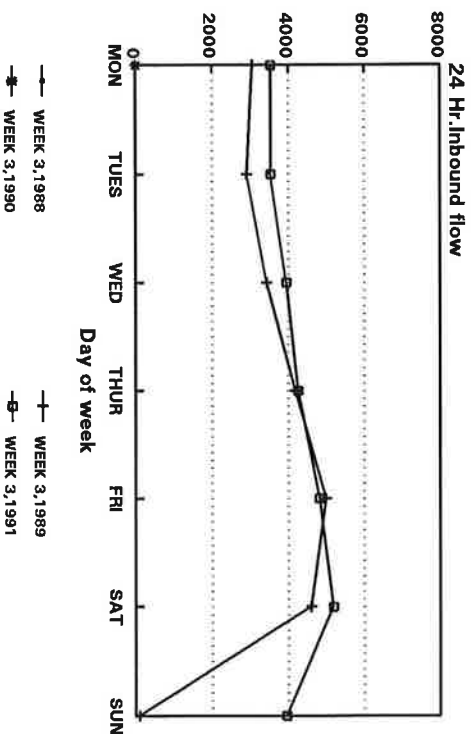
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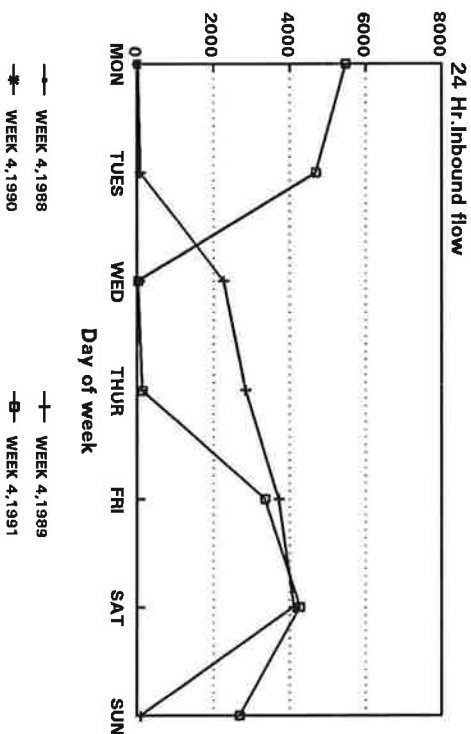
### WEEK 2



### WEEK 3



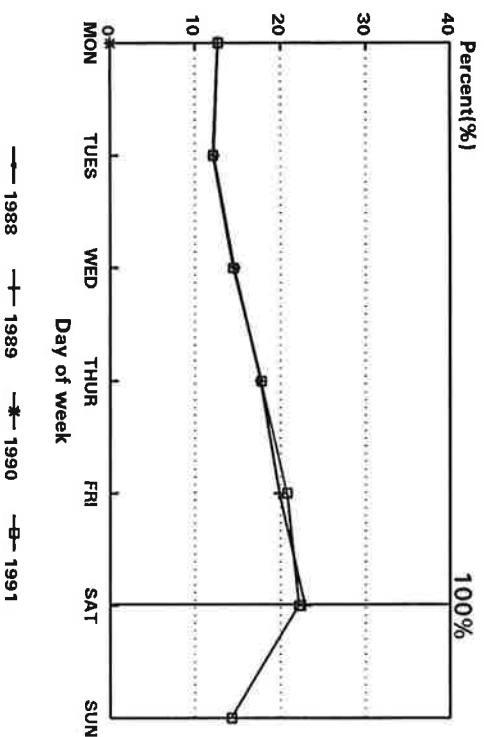
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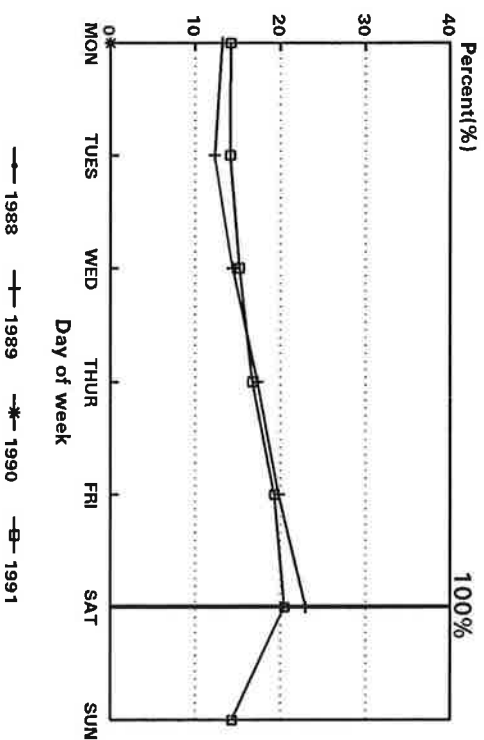
FLOWS BY DAY OF WEEK 1988 - 1991  
ASDA BURGHEATH

Figure A.2

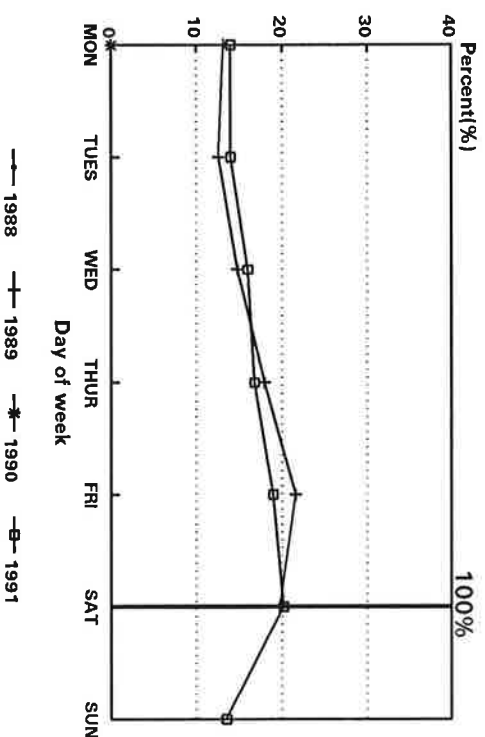
WEEK 1



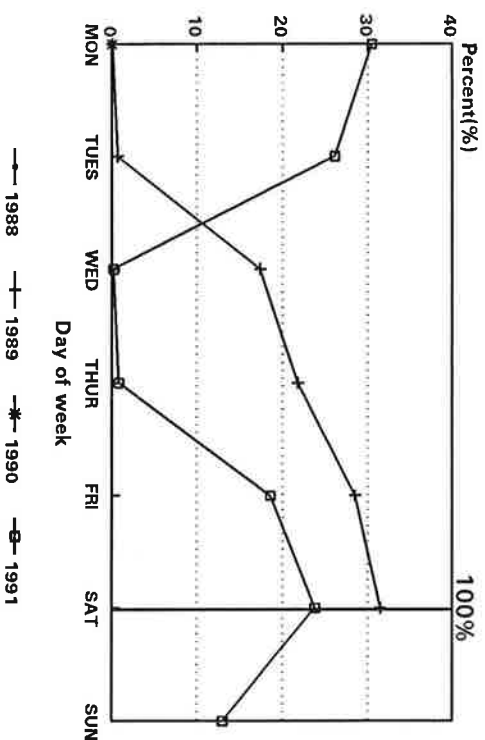
WEEK 2



WEEK 3

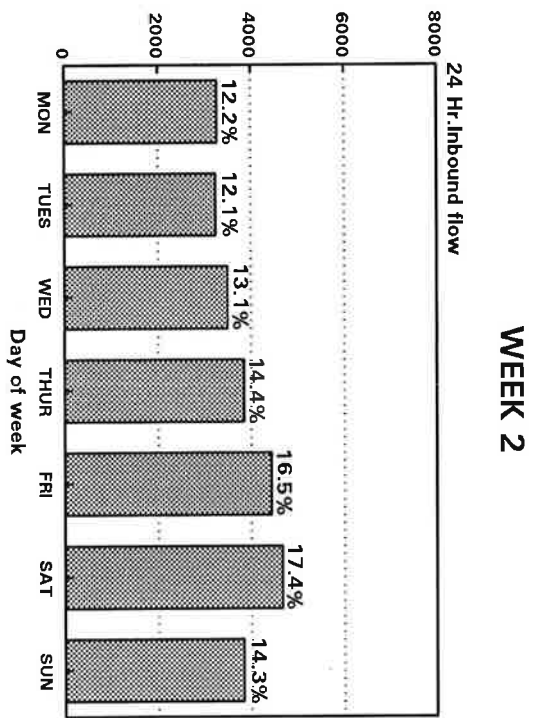
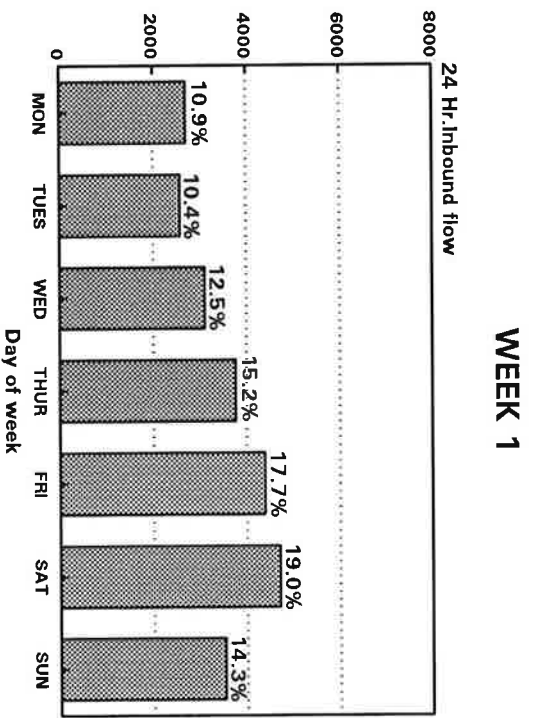


WEEK 4

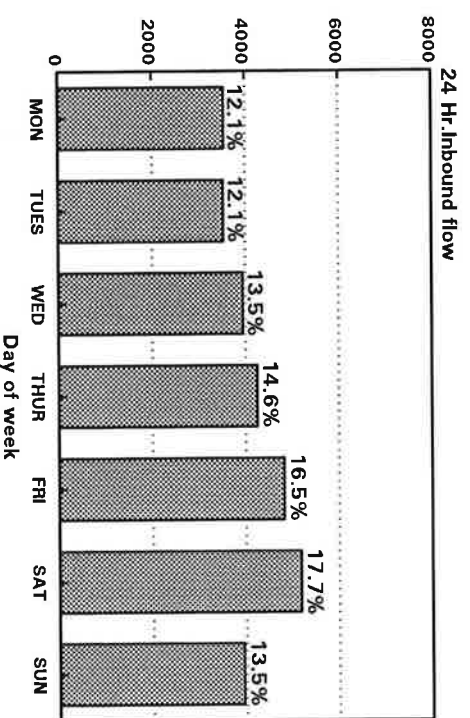


PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
ASDA BURGH HEATH

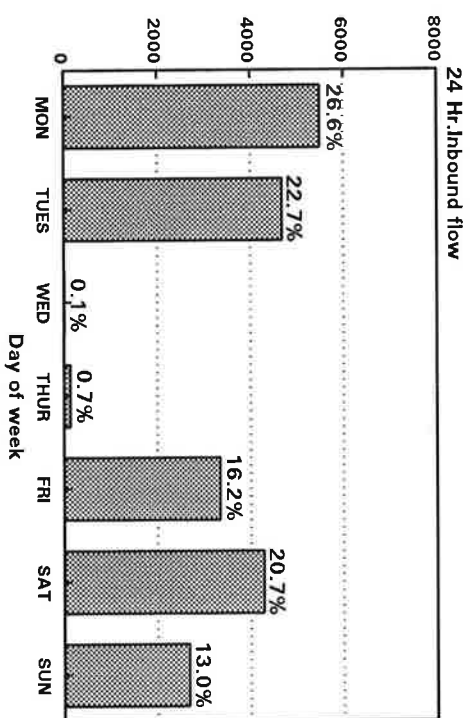
Figure A.3



### WEEK 3



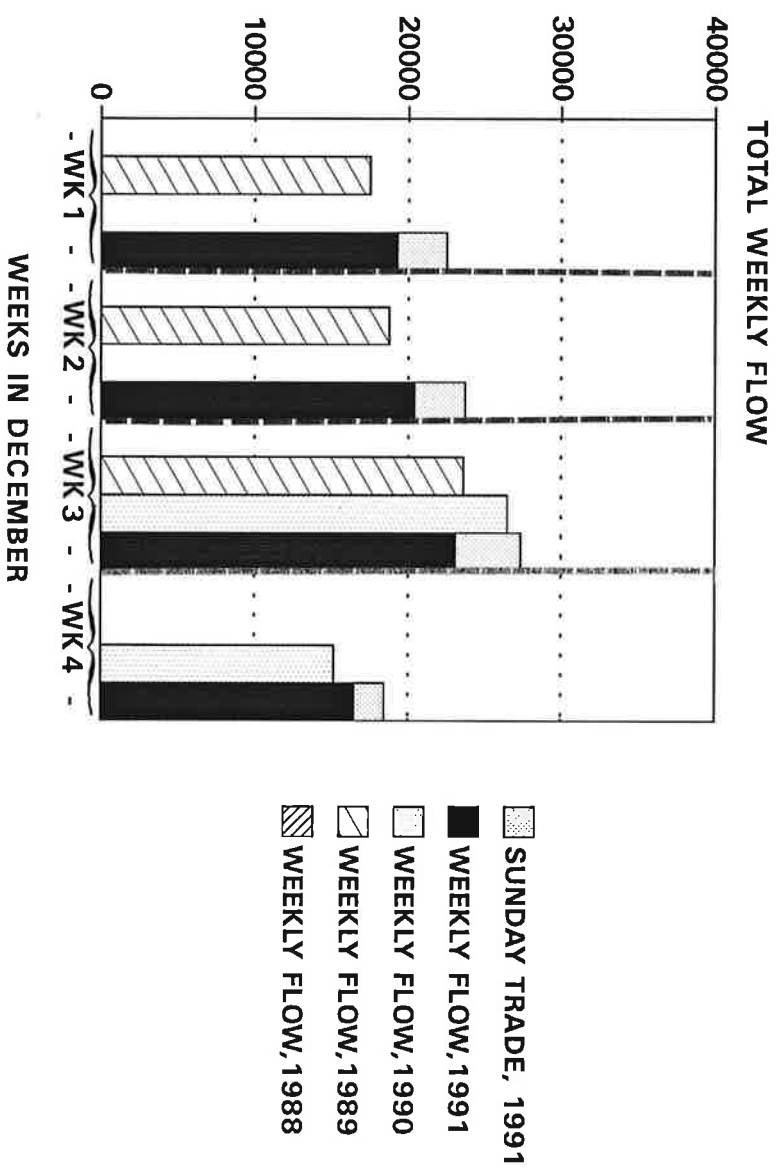
### WEEK 4



**FLOWS BY DAY OF WEEK - 1991**  
**ASDA BURGH HEATH**

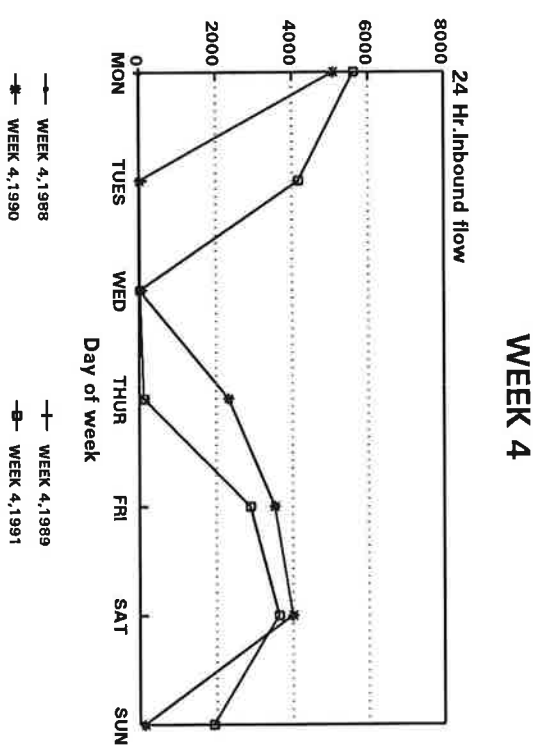
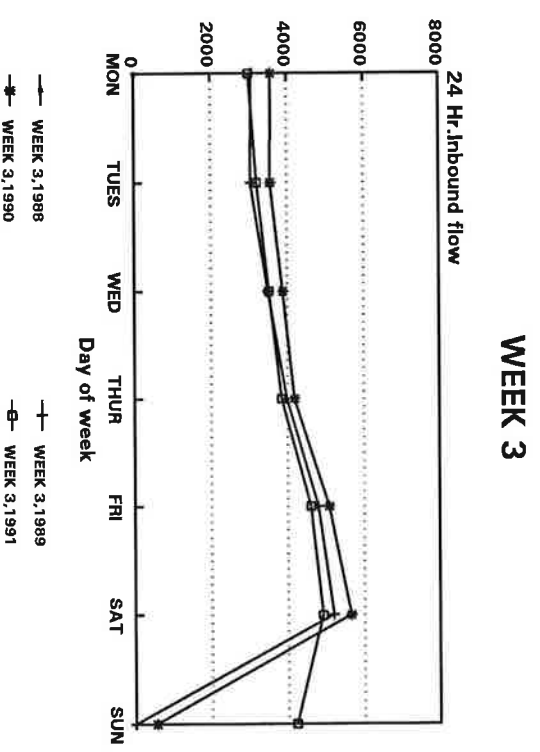
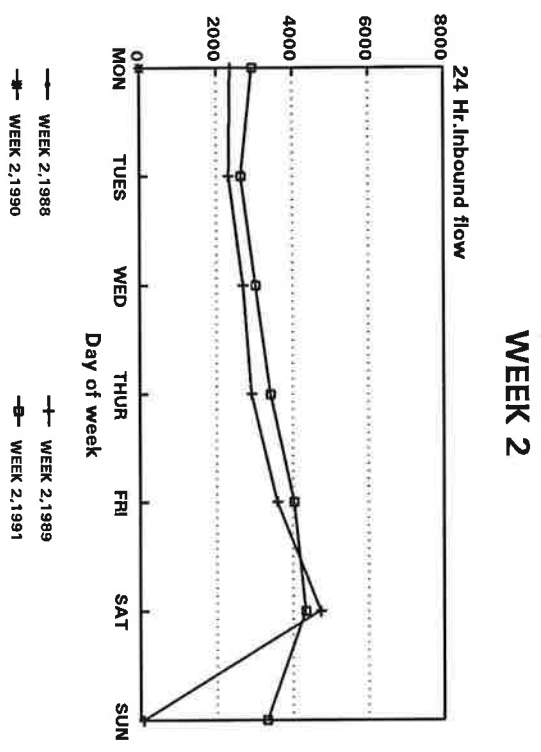
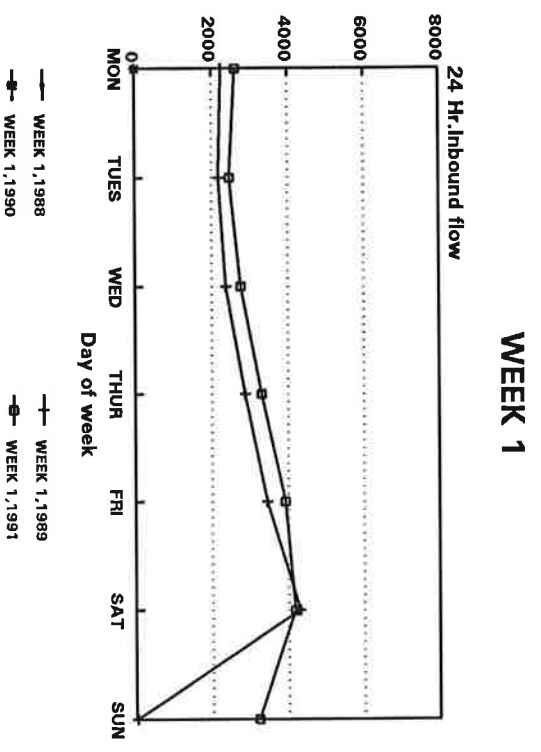
Figure A.4

# ASDA FAREHAM



WEEKLY FLOWS 1988 - 1991  
ASDA FAREHAM

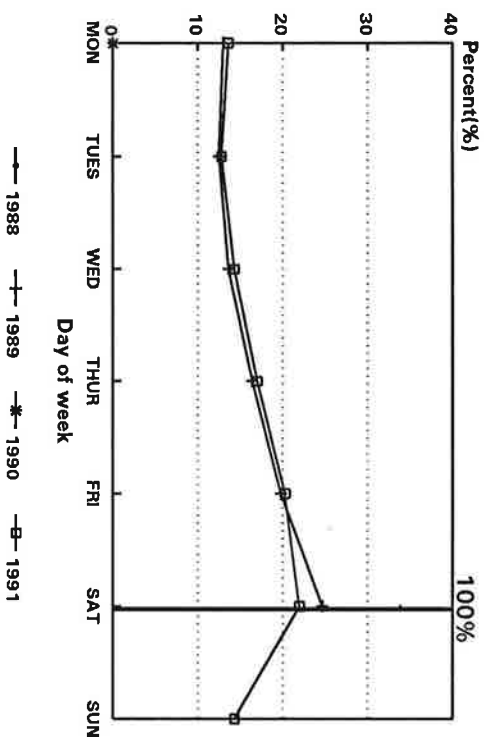
Figure B.1



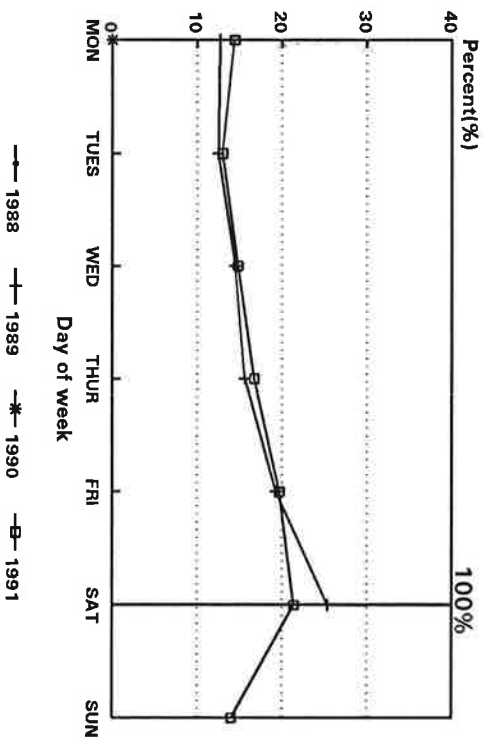
**FLOWS BY DAY OF WEEK 1988 - 1991**  
**ASDA FAREHAM**

**Figure B.2**

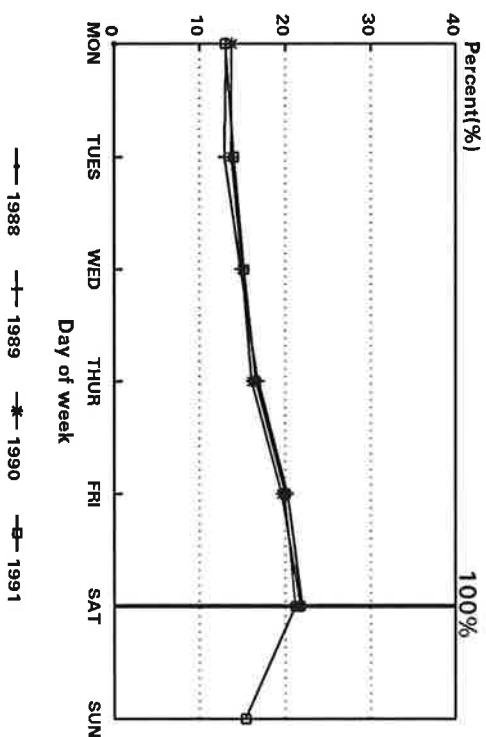
WEEK 1



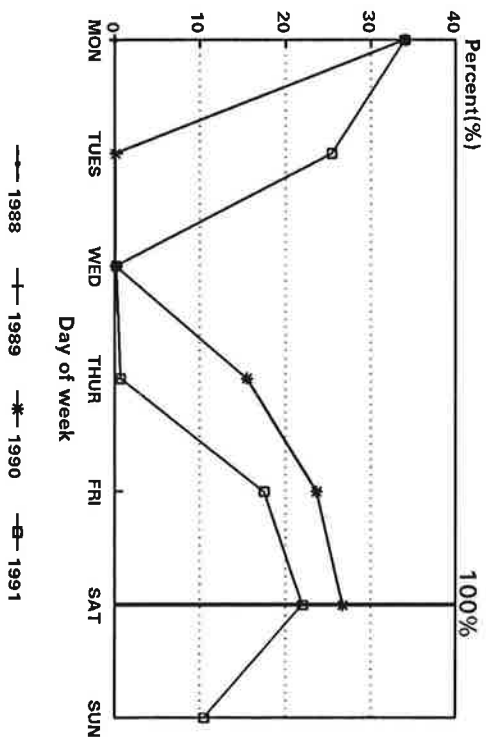
WEEK 2



WEEK 3

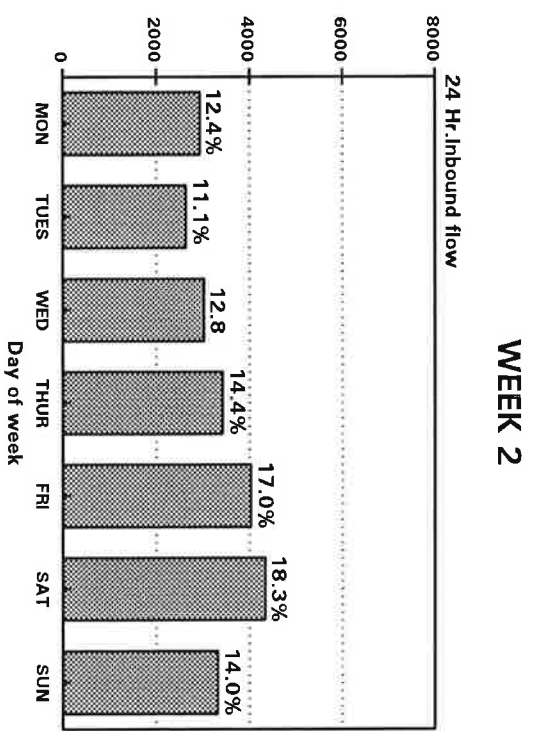
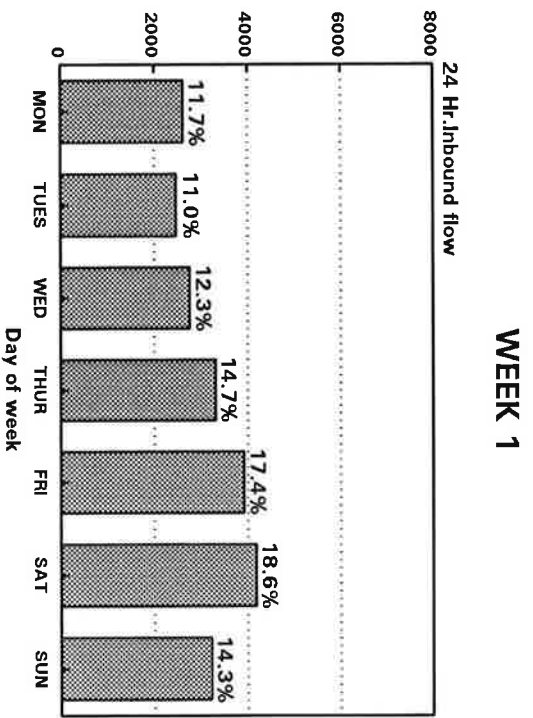


WEEK 4

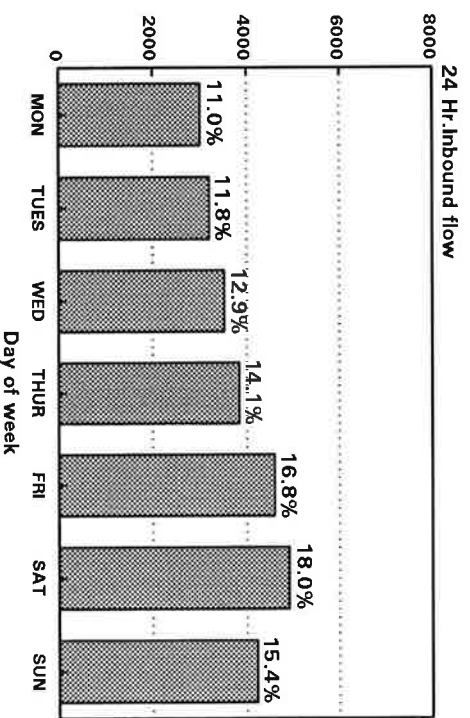


PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
ASDA FAREHAM

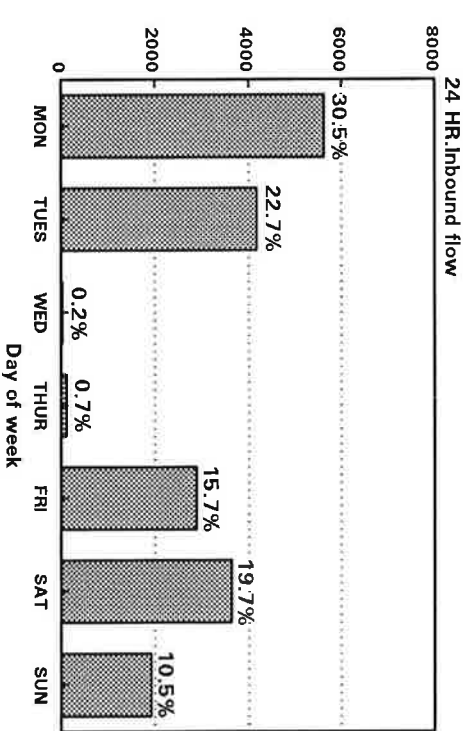
Figure B.3



### WEEK 3



### WEEK 4

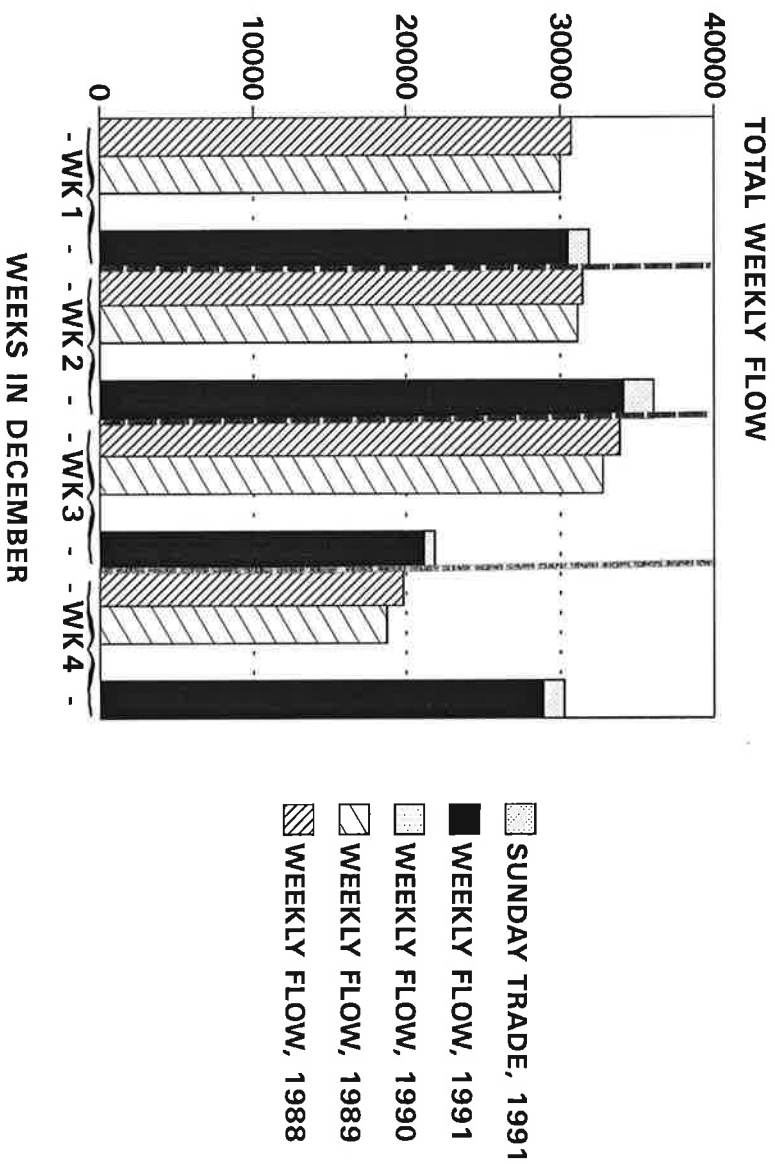


**FLOWS BY DAY OF WEEK - 1991**  
**ASDA FAREHAM**

**Figure B.4**

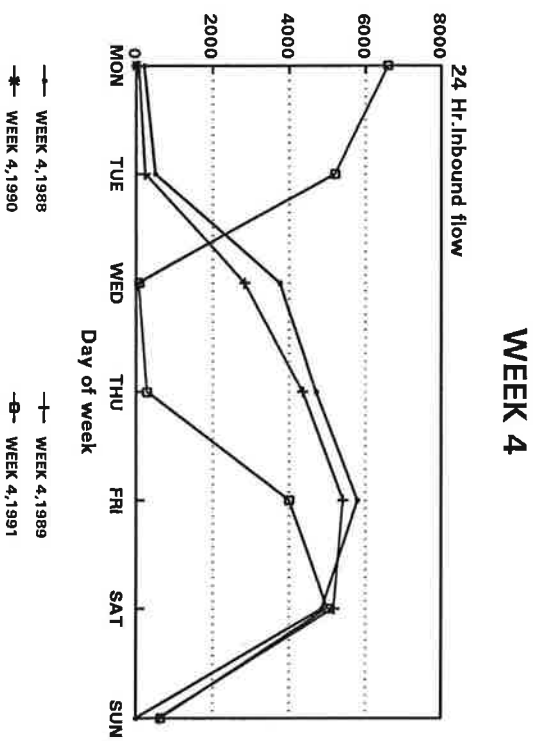
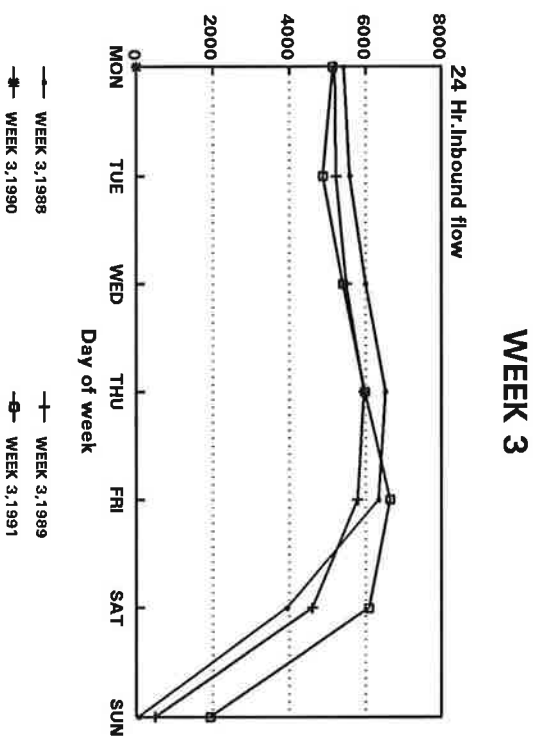
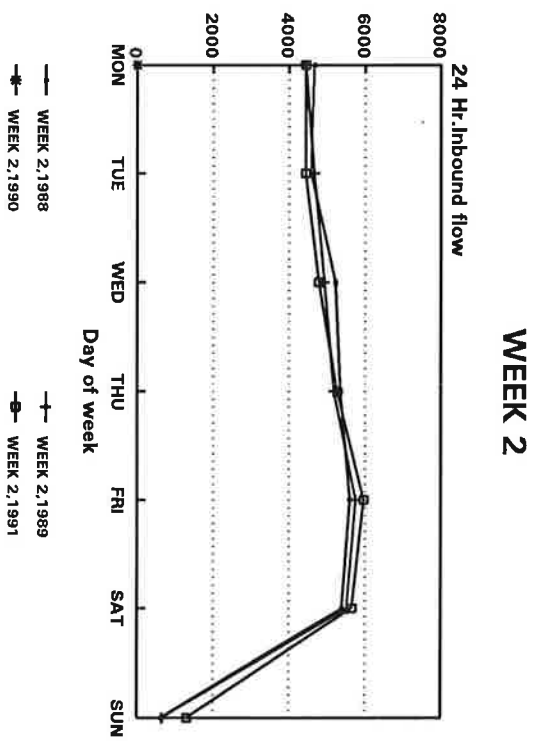
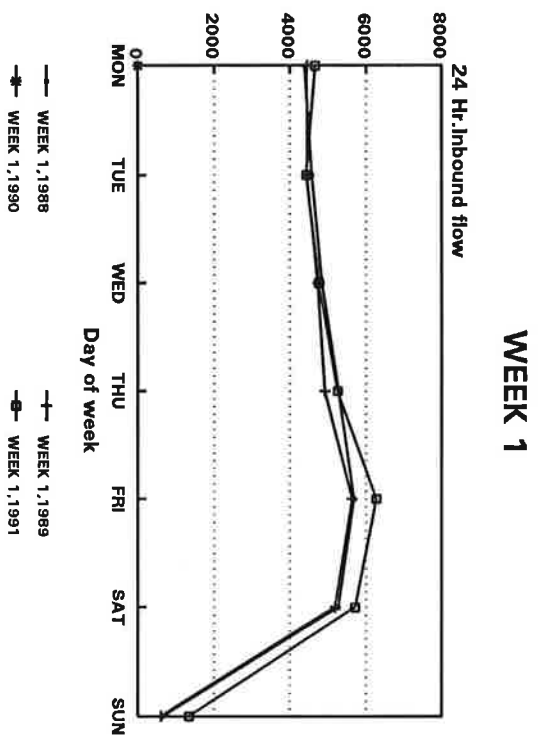


# SAINSBURY BURPPHAM



WEEKLY FLOWS 1988 - 1991  
SAINSBURY BURPPHAM

Figure C.1

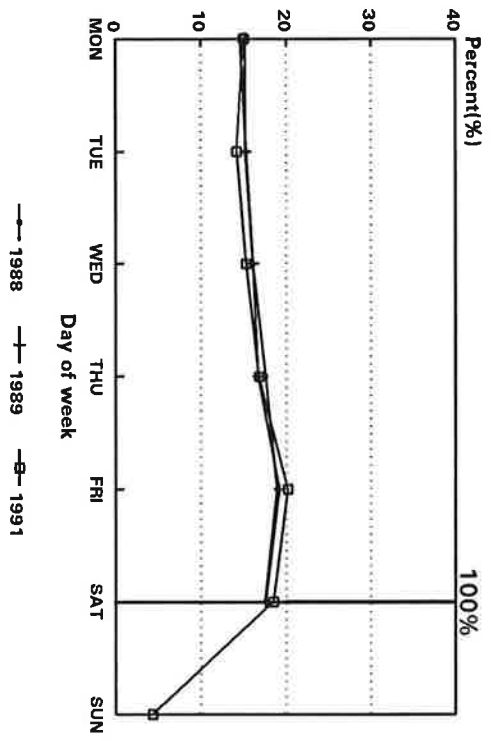


**FLOWS BY DAY OF WEEK 1988 - 1991**  
**SAINSBURY BURPHAM**

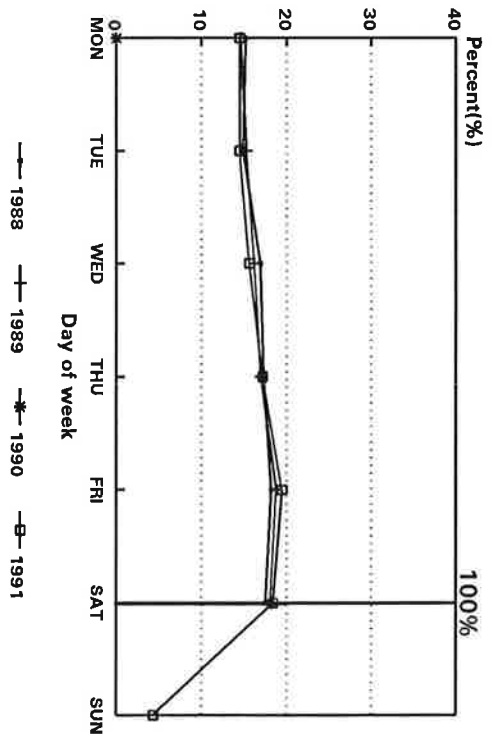
Figure C.2

PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
 SAINSBURY BURPHAM

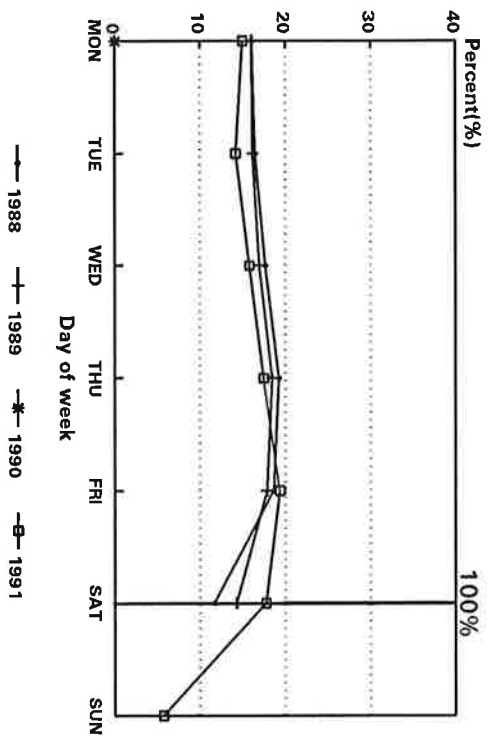
WEEK 1



WEEK 2



WEEK 3



WEEK 4

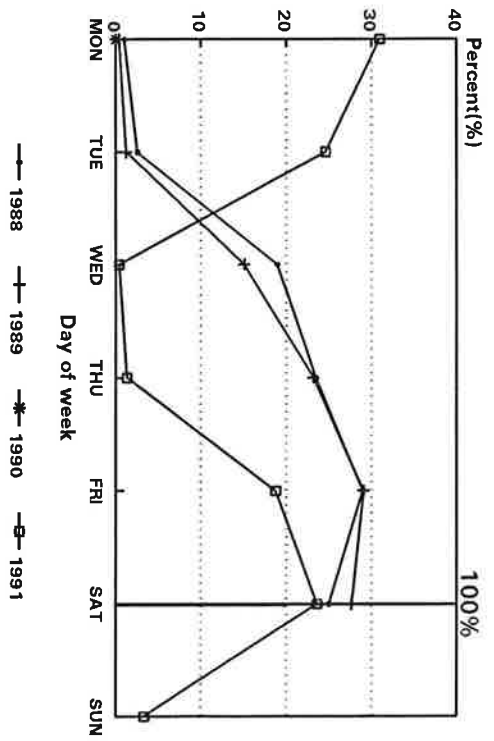
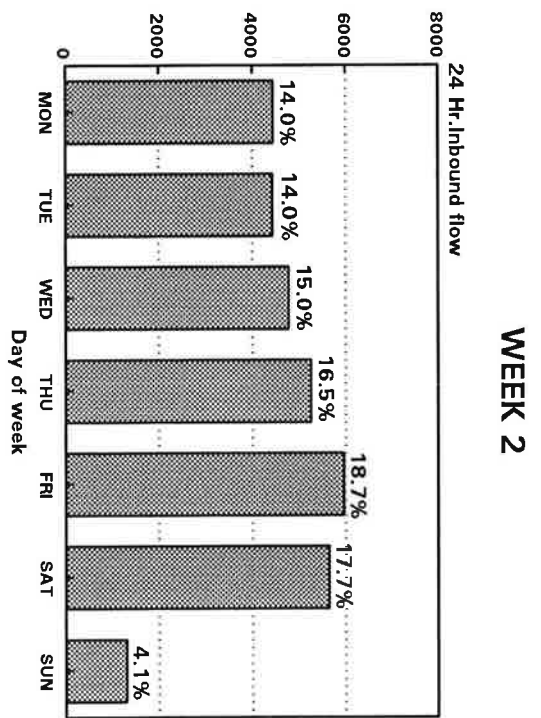
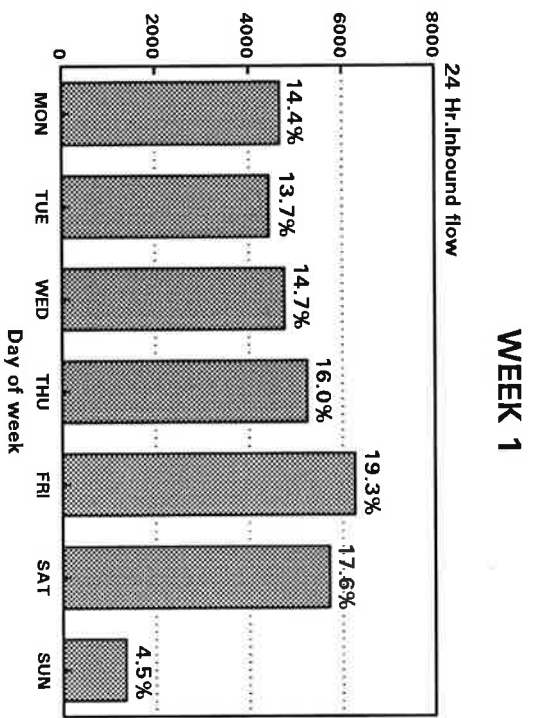
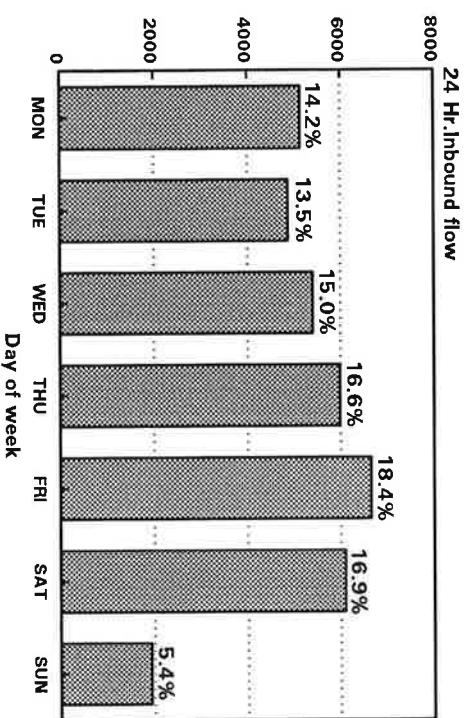


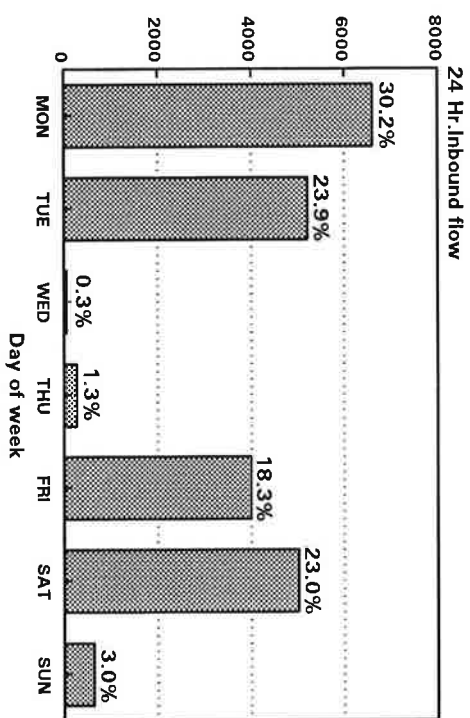
Figure C.3



### WEEK 3



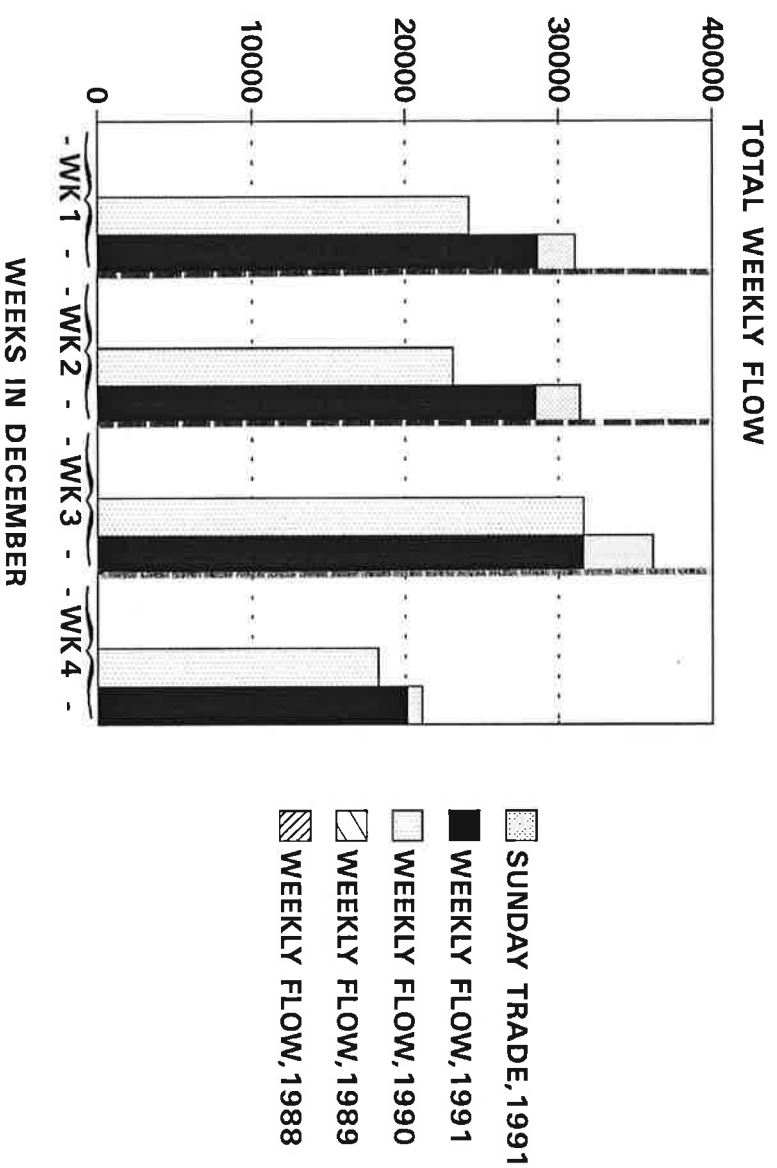
### WEEK 4



**FLOWS BY DAY OF WEEK - 1991**  
**SAINSBURY BURPHAM**

**Figure C.4**

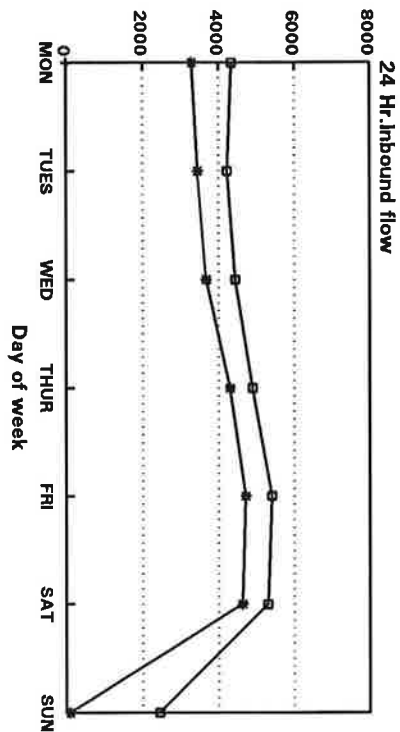
# SAINSBURY CHICHESTER



WEEKLY FLOWS 1988 - 1991  
SAINSBURY CHICHESTER

Figure D.1

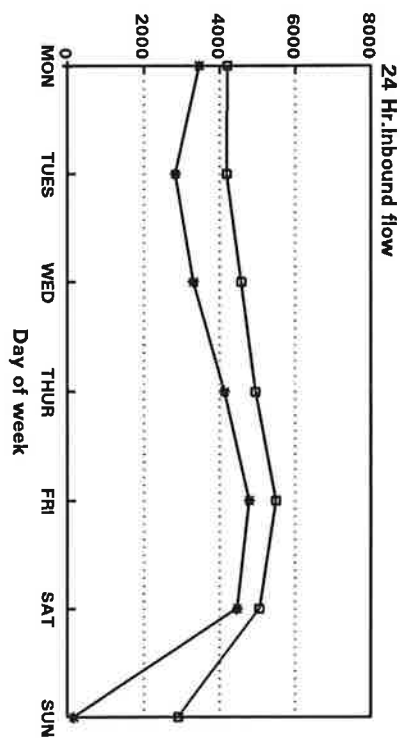
### WEEK 1



WEEK 1, 1988  
WEEK 1, 1990

Note: Data is patched for 1990

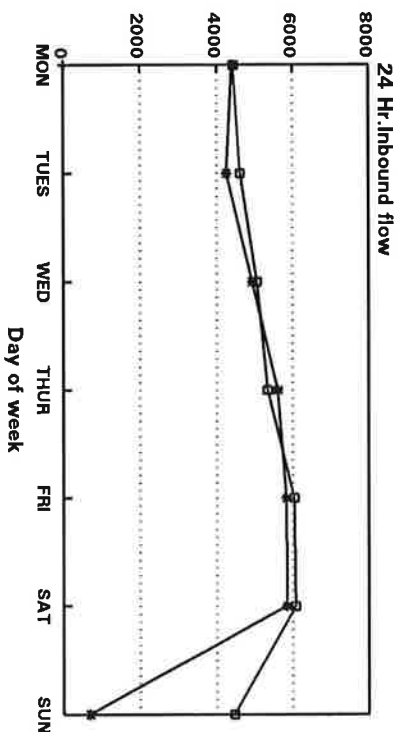
### WEEK 2



WEEK 2, 1988  
WEEK 2, 1990

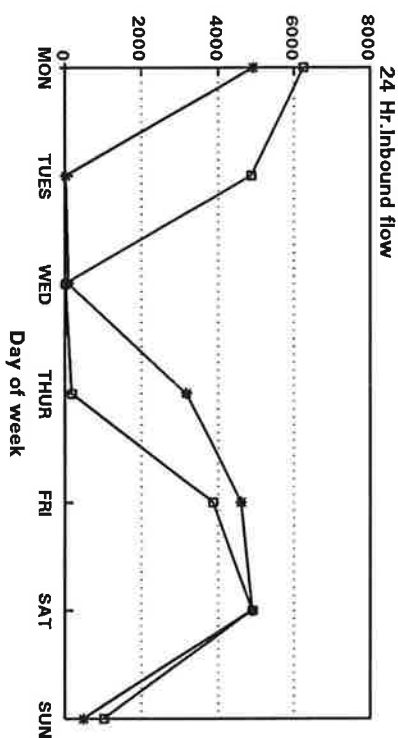
Note: Data is patched for 1990

### WEEK 3



WEEK 3, 1988  
WEEK 3, 1991

### WEEK 4

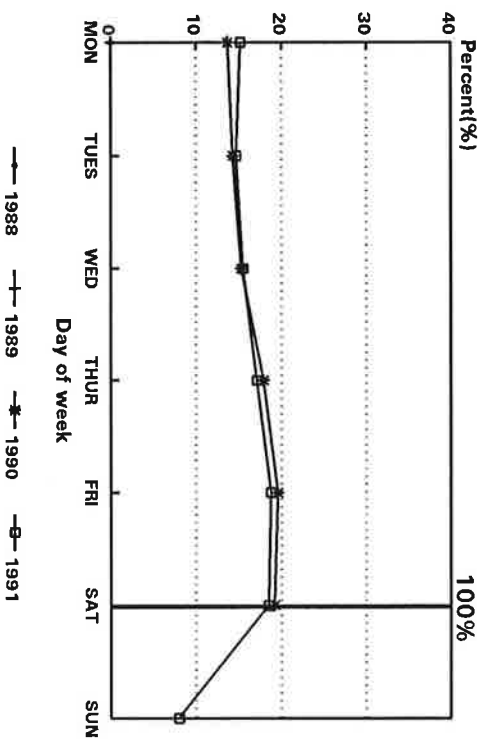


WEEK 4, 1988  
WEEK 4, 1991

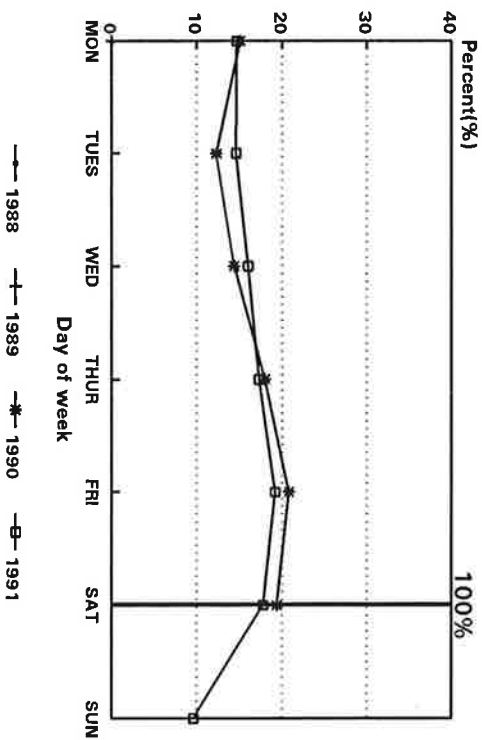
## FLOWS BY DAY OF WEEK 1988 - 1991 SAINSBURY CHICHESTER

Figure D.2

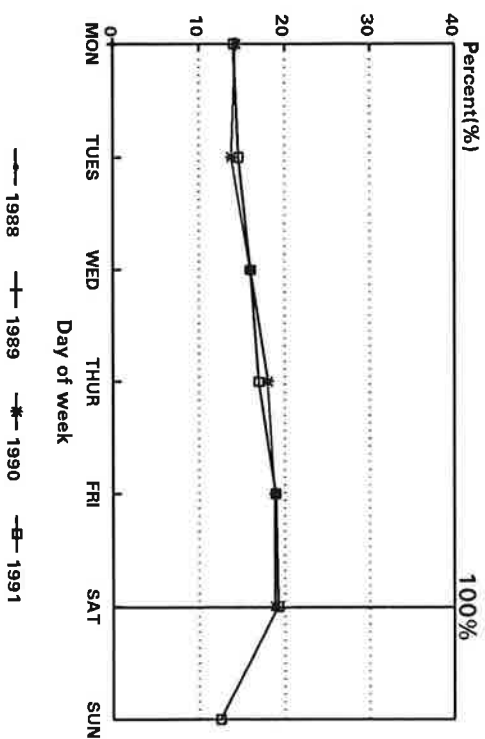
WEEK 1



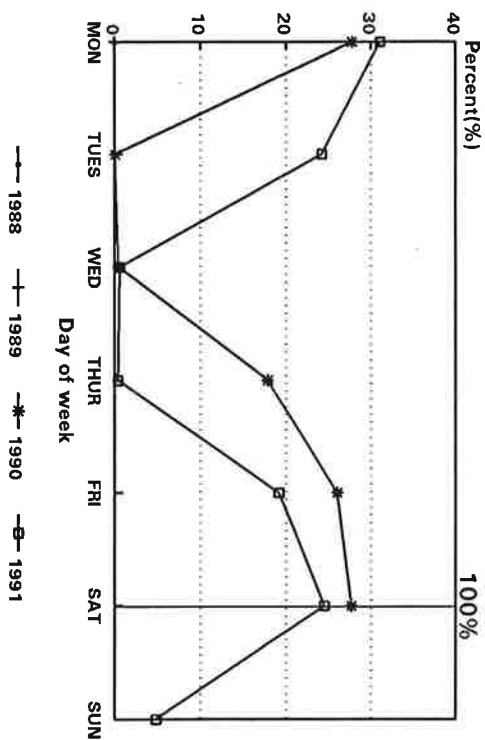
WEEK 2



WEEK 3

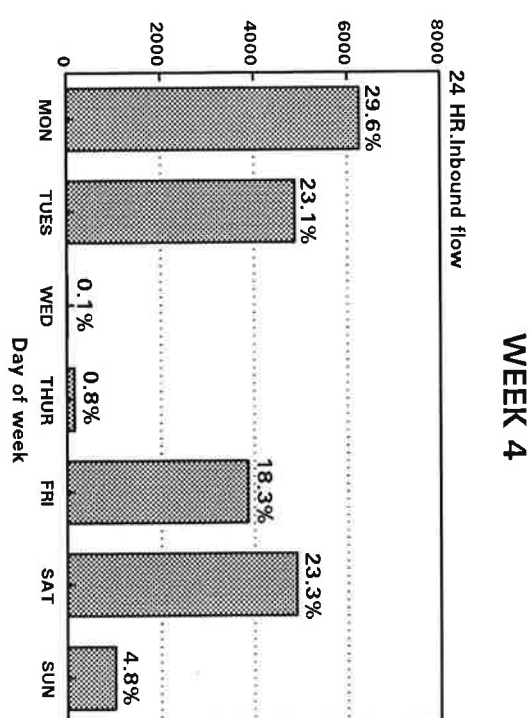
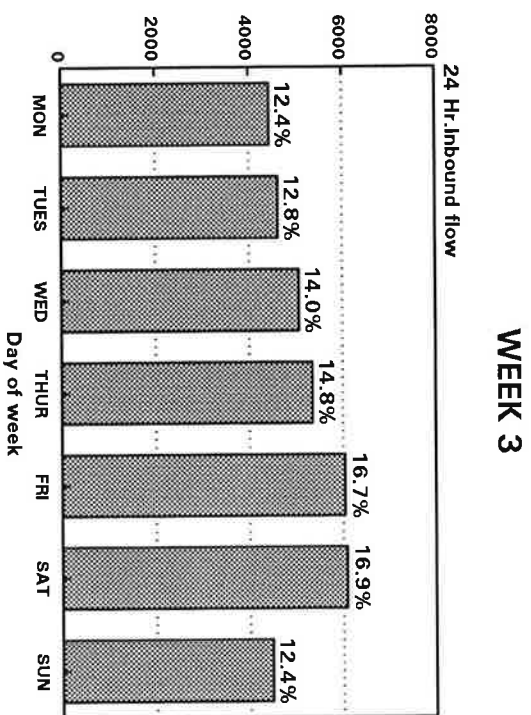
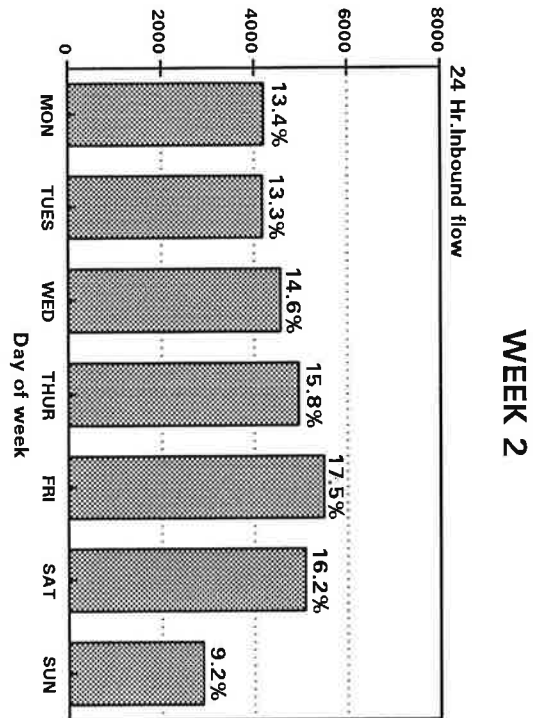
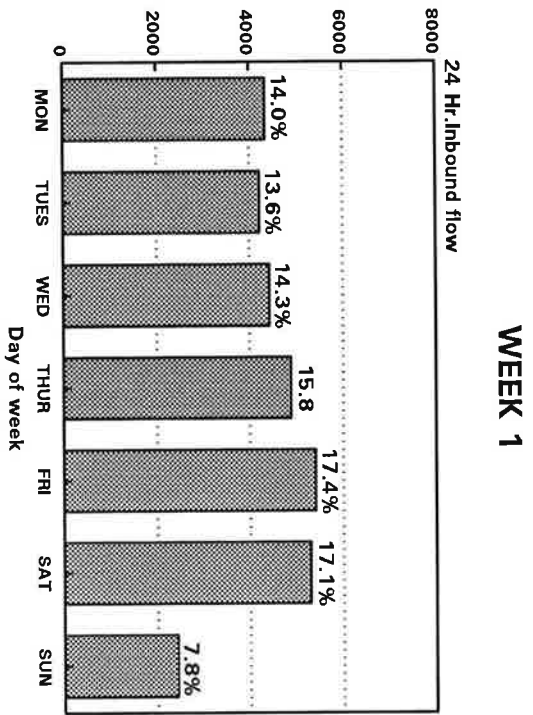


WEEK 4



PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
SAINSBURY CHICHESTER

Figure D.3

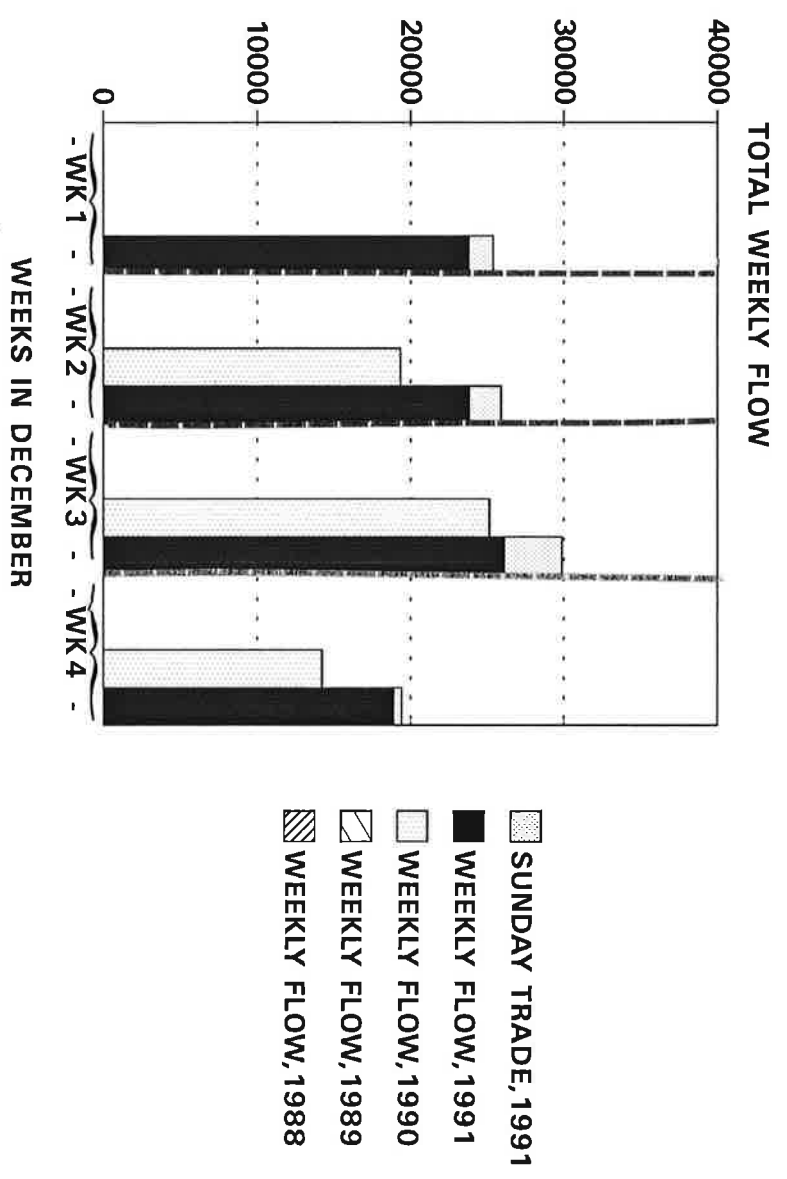


**FLOWS BY DAY OF WEEK - 1991**  
**SAINSBURY CHICHESTER**

Figure D.4

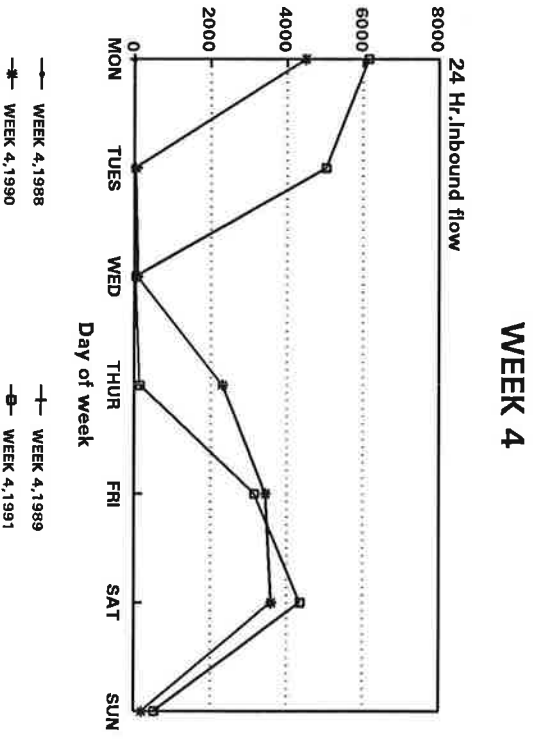
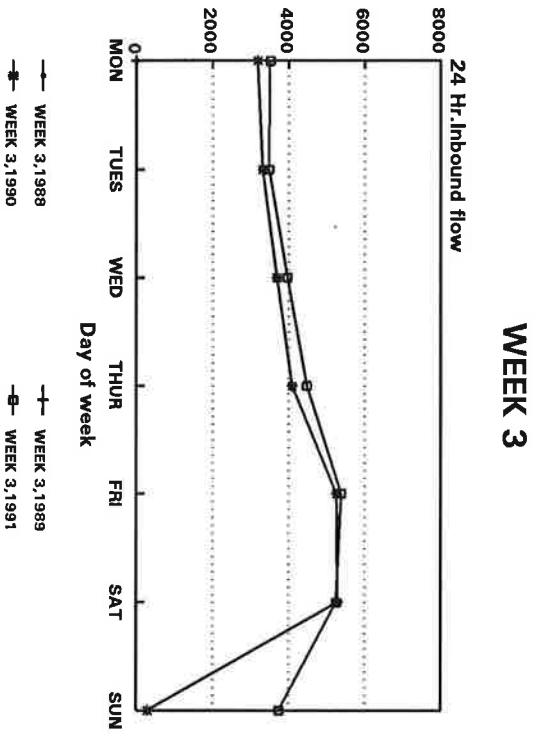
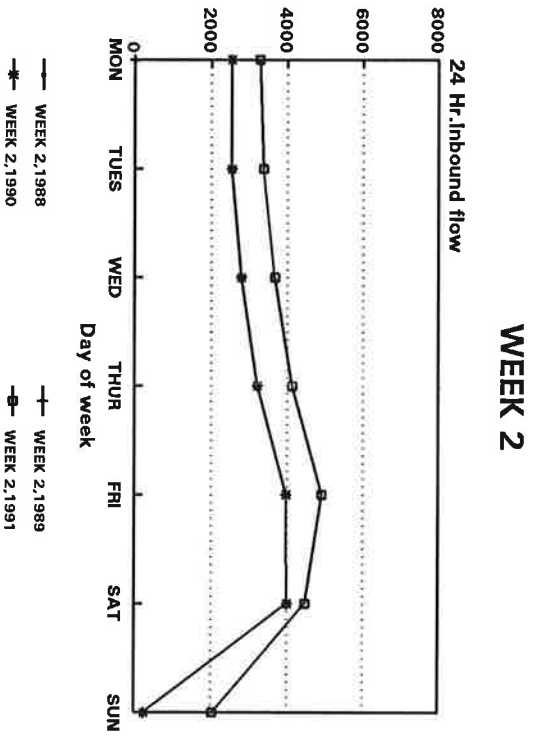
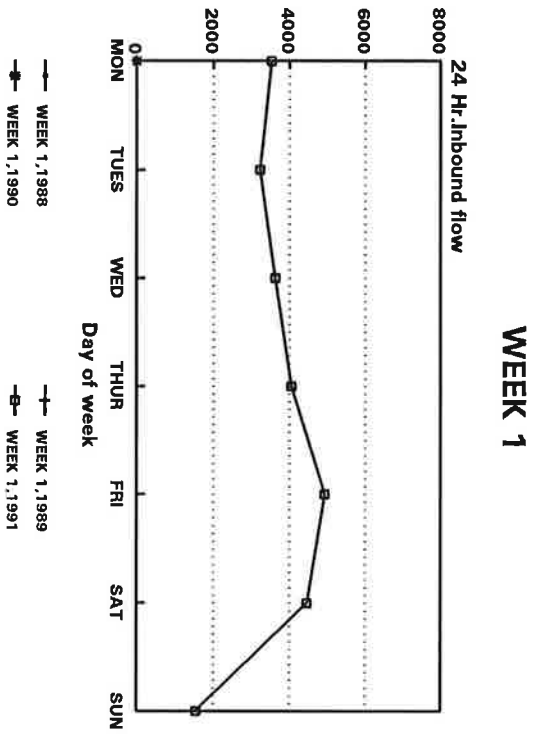


# SAINSBURY POOLE



WEEKLY FLOWS 1988 - 1991  
SAINSBURY POOLE

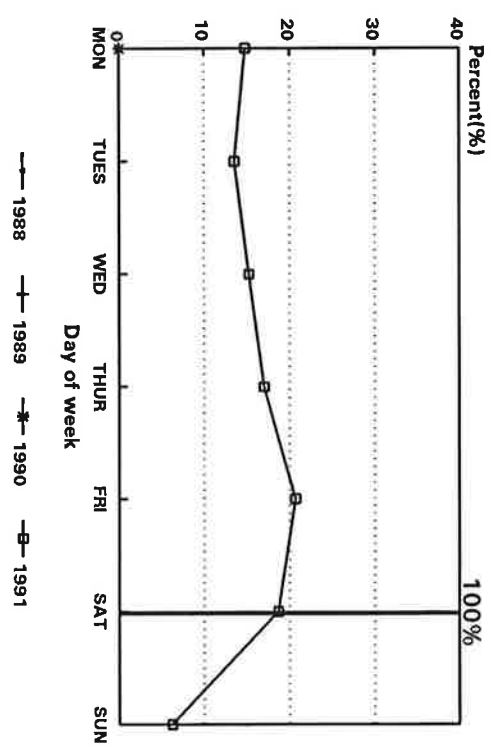
Figure E.1



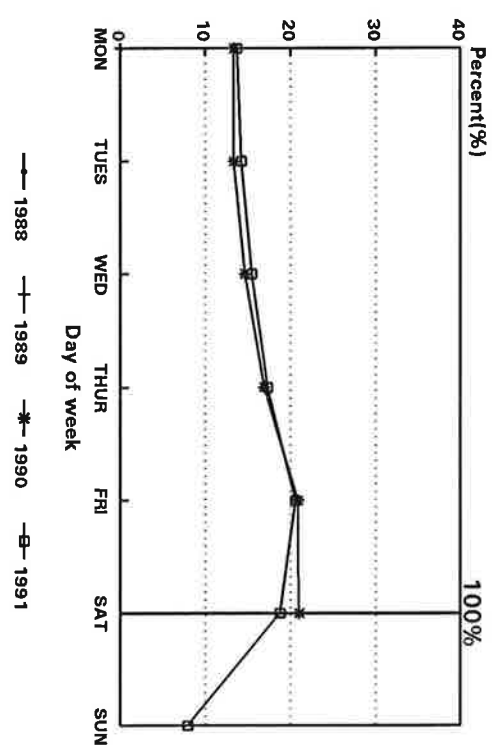
**FLOWS BY DAY OF WEEK 1988 - 1991**  
**SAINSBURY POOLE**

Figure E.2

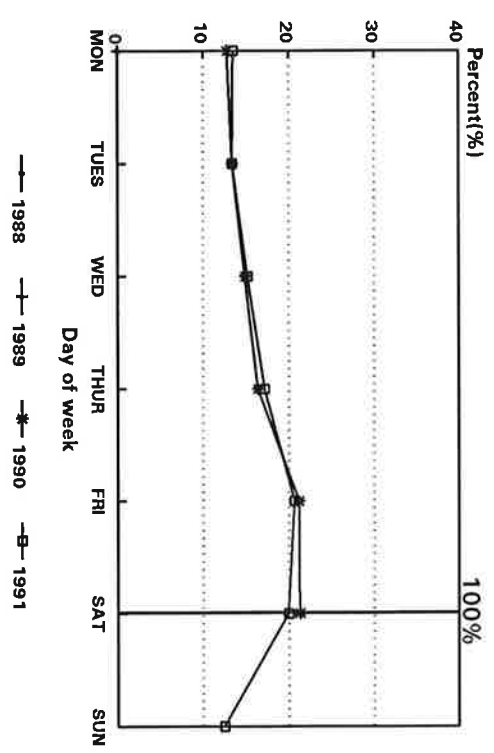
WEEK 1



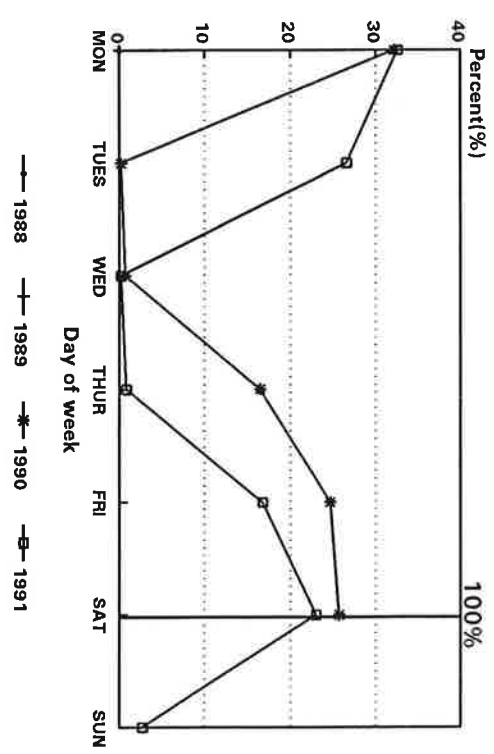
WEEK 2



WEEK 3

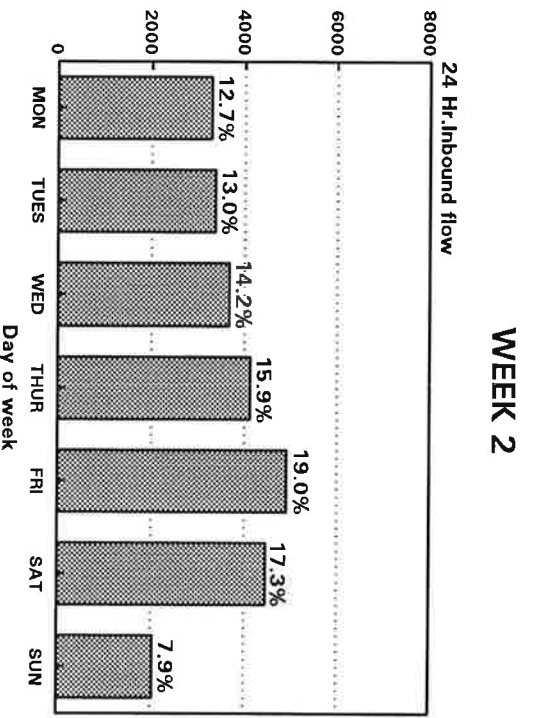
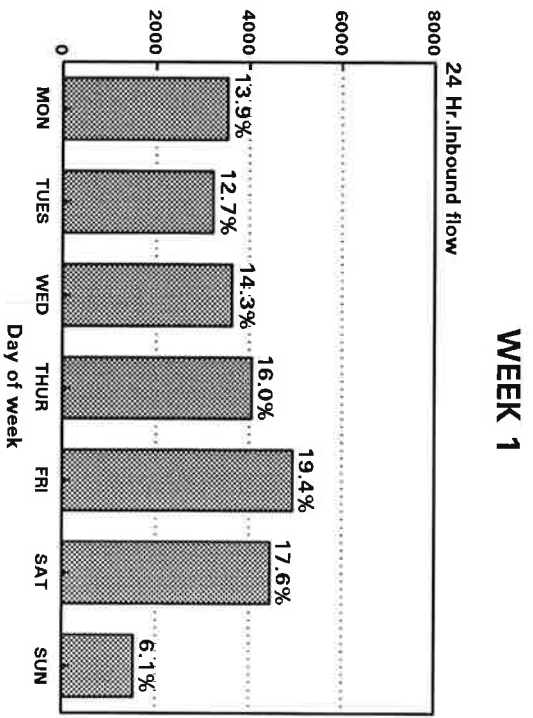


WEEK 4

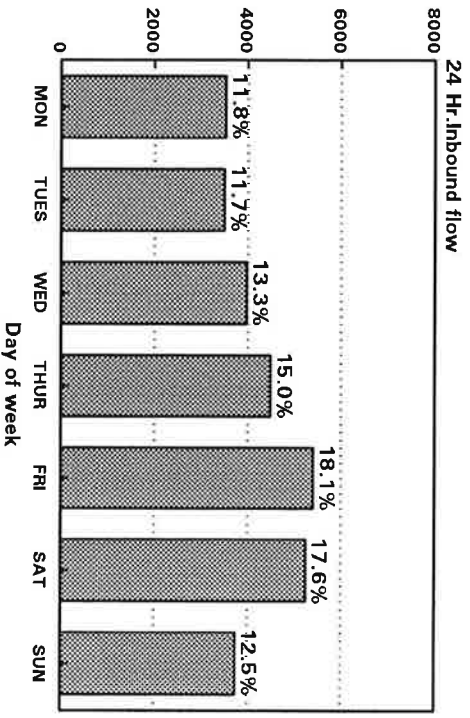


PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
SAINSBURY POOLE

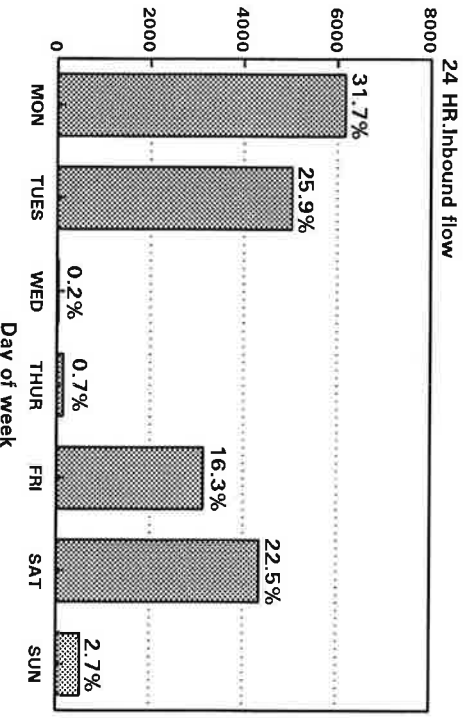
Figure E.3



### WEEK 3



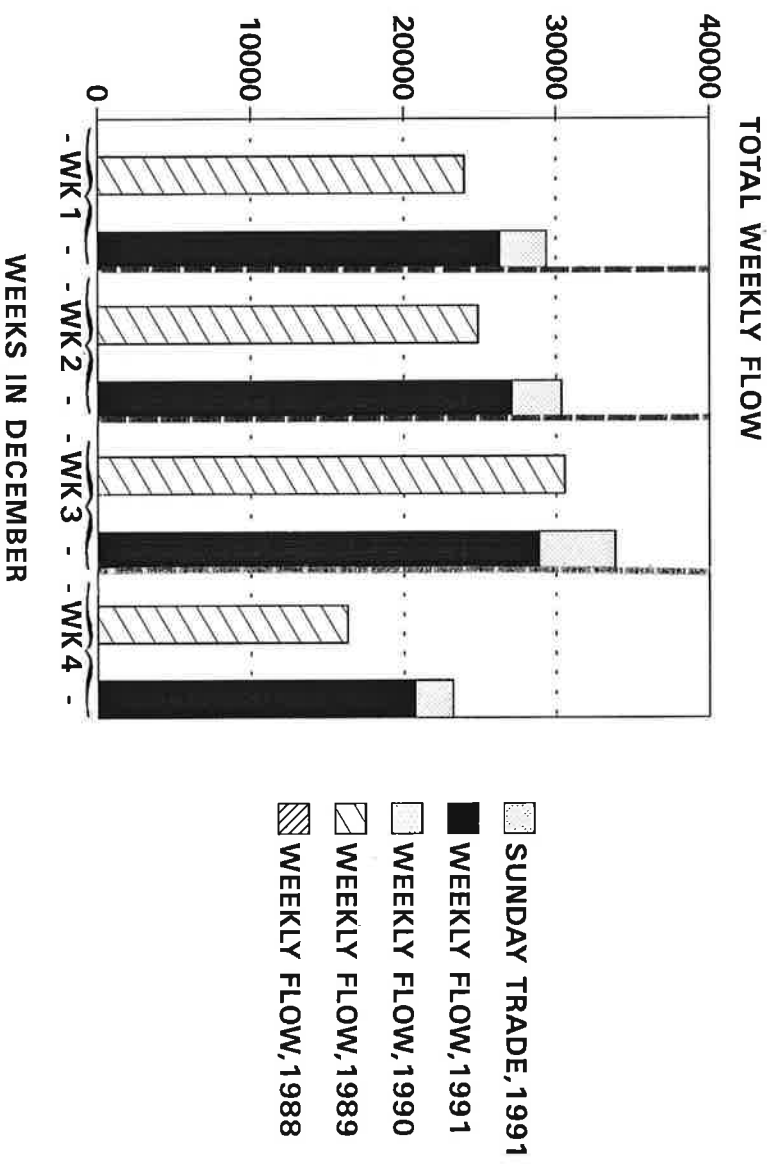
### WEEK 4



**FLOWS BY DAY OF WEEK - 1991**  
**SAINSBURY POOLE**

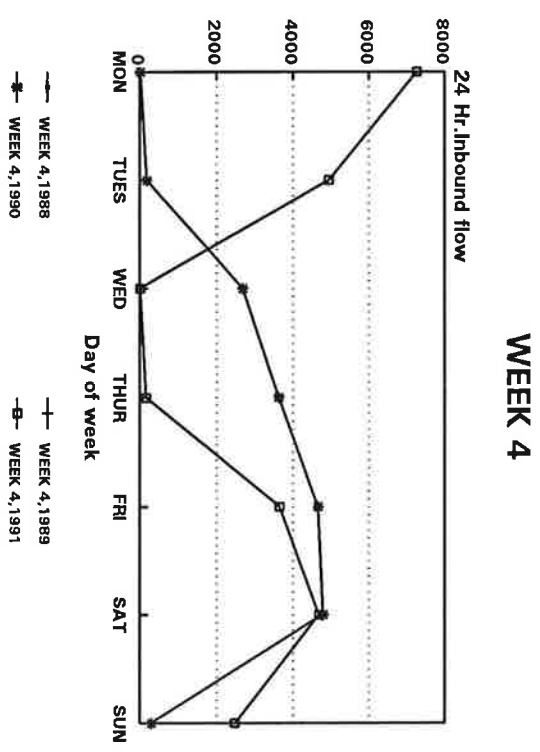
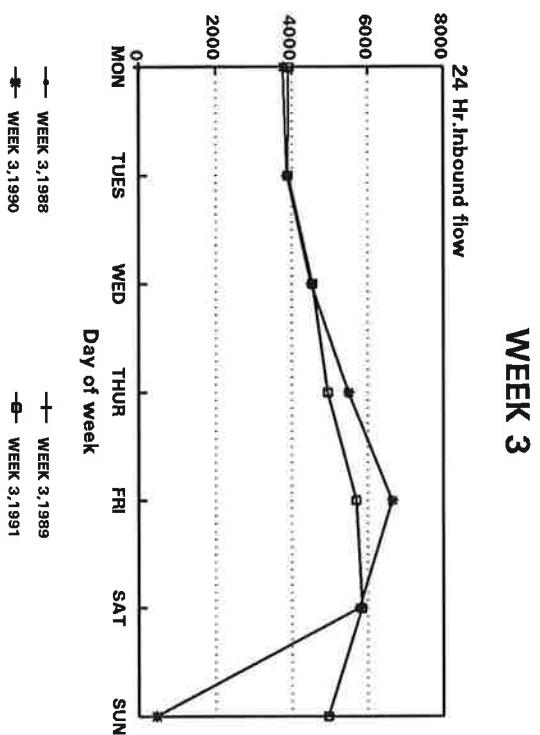
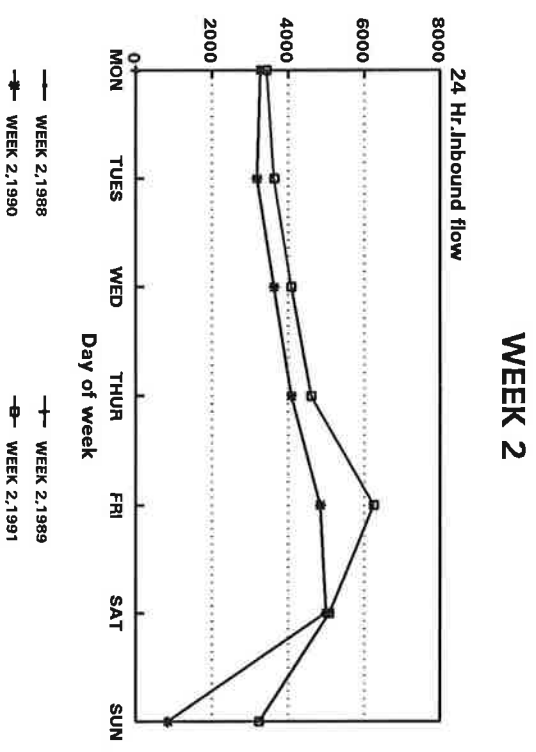
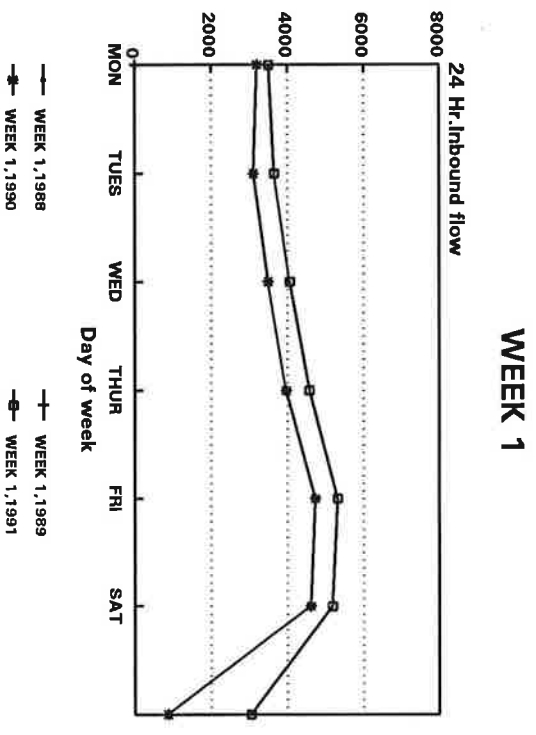
**Figure E.4**

# TESCO BOGNOR REGIS



WEEKLY FLOWS 1988 - 1991  
TESCO BOGNOR REGIS

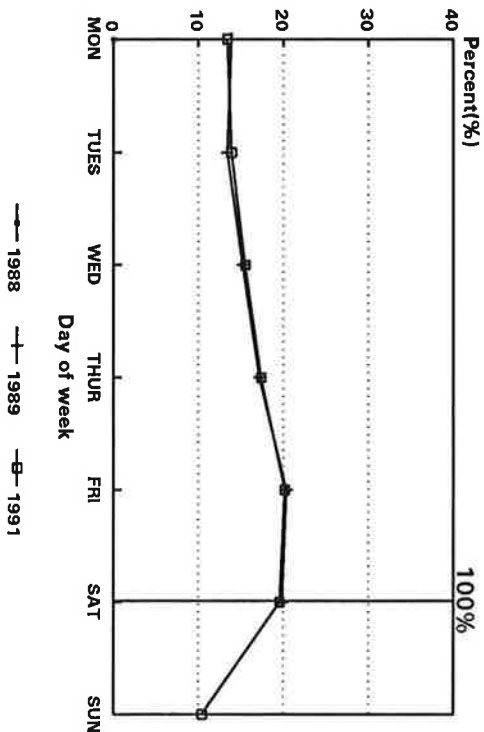
Figure F. 1



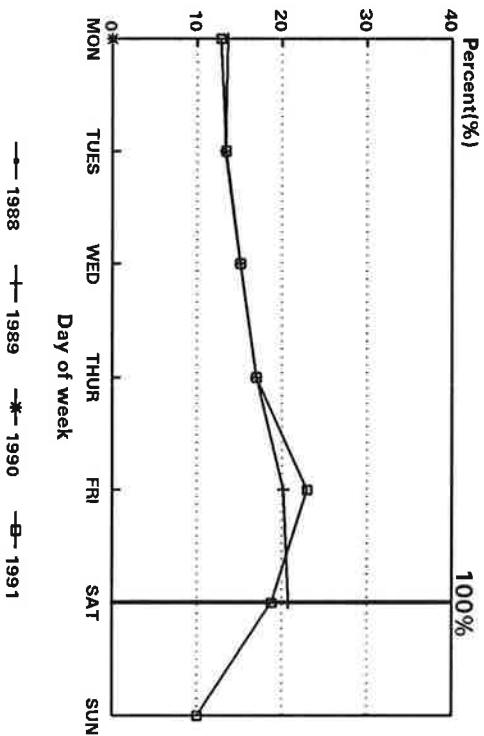
**FLOWS BY DAY OF WEEK 1988 - 1991  
TESCO BOGNOR REGIS**

**Figure F.2**

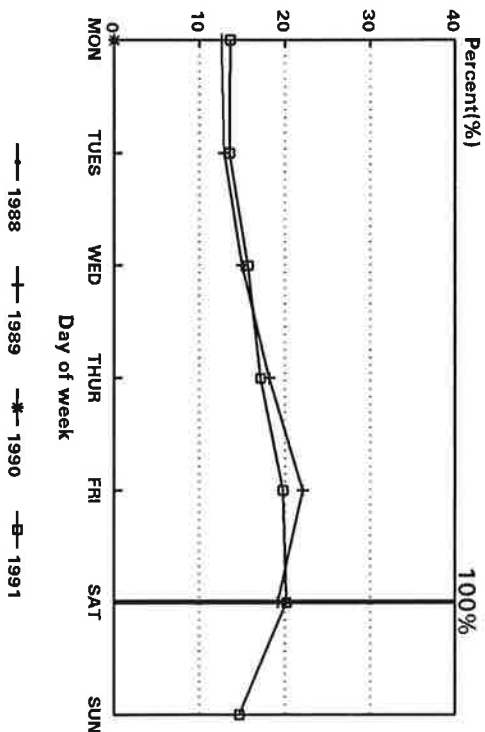
WEEK 1



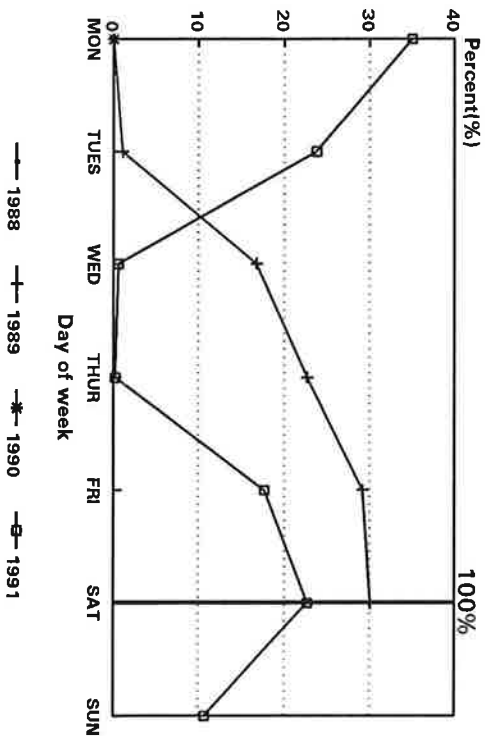
WEEK 2



WEEK 3

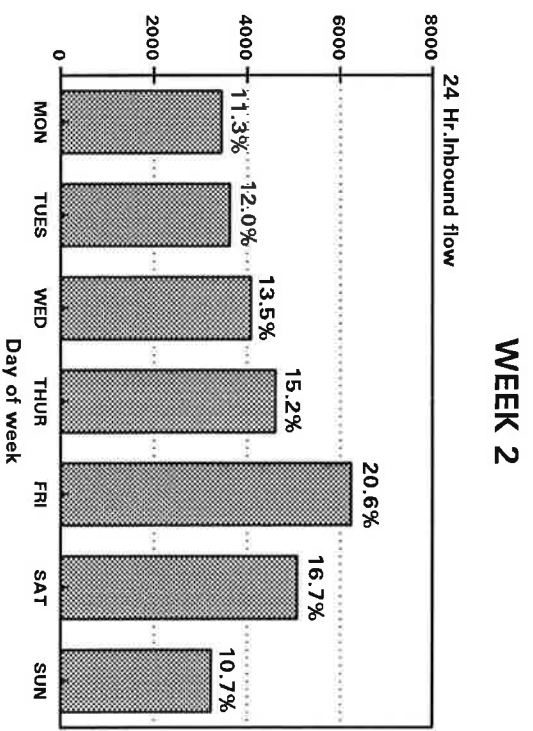
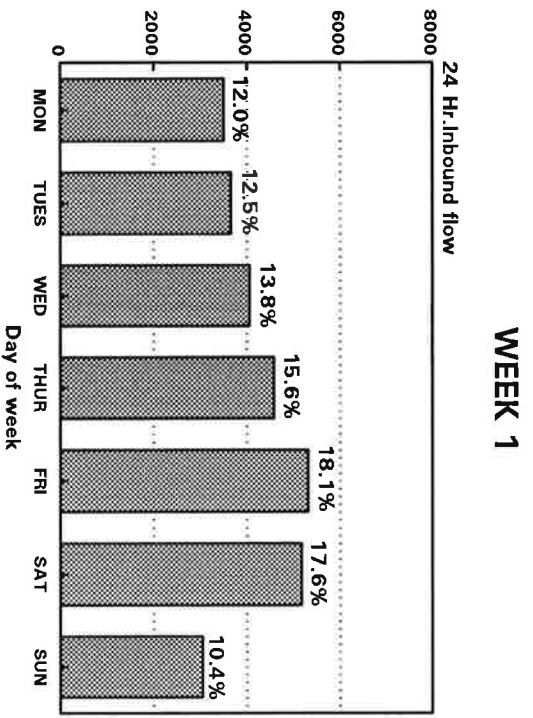


WEEK 4

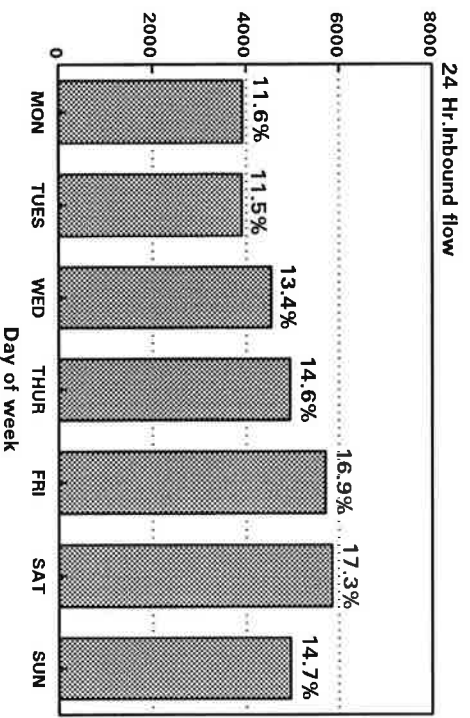


PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
TESCO BOGNOR REGIS

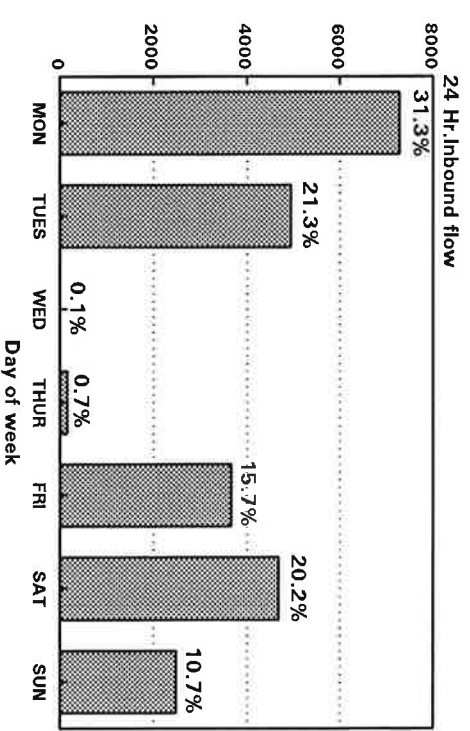
Figure F.3



### WEEK 3



### WEEK 4

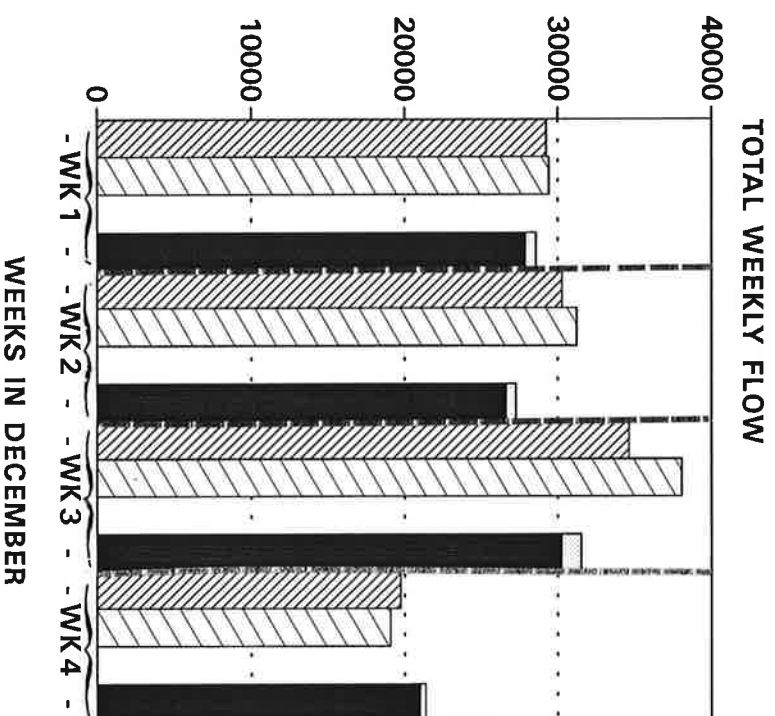


**FLOWS BY DAY OF WEEK - 1991**  
**TESCO BOGNOR REGIS**

**Figure F.4**



# TESCO HOOKWOOD

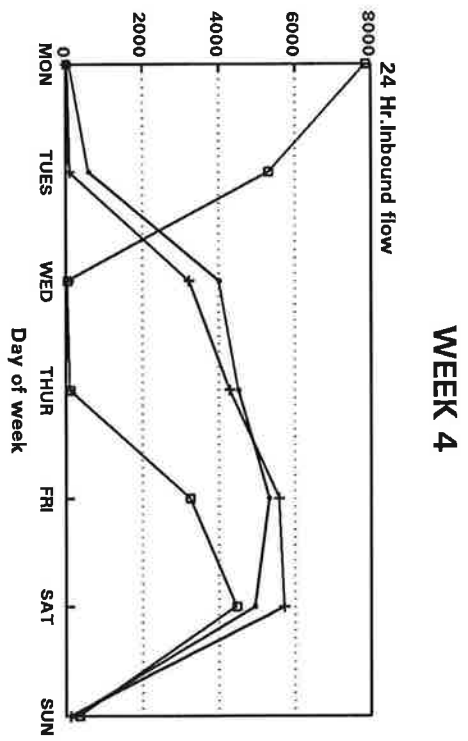
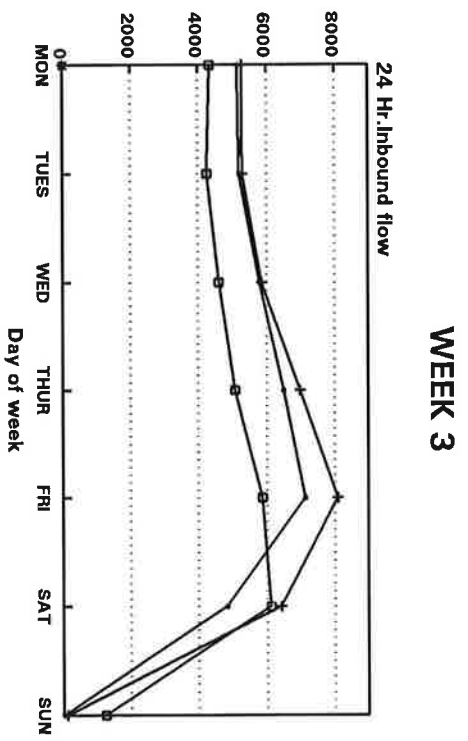
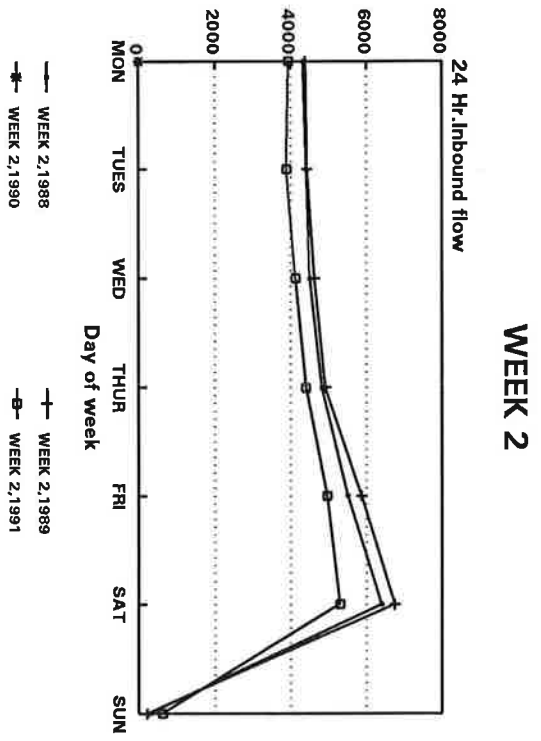
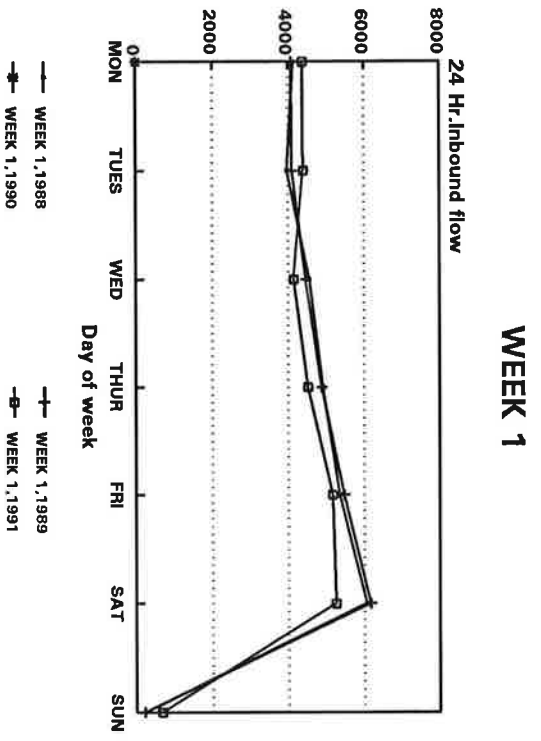


- SUNDAY TRADE, 1991
- WEEKLY FLOW, 1991
- WEEKLY FLOW, 1990
- ▨ WEEKLY FLOW, 1989
- ▩ WEEKLY FLOW, 1988

Note: Some data patched

WEEKLY FLOWS 1988 - 1991  
TESCO HOOKWOOD

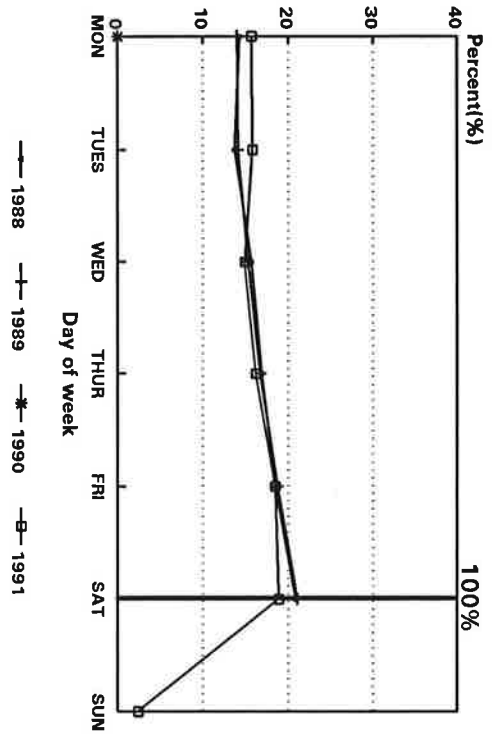
Figure G.1



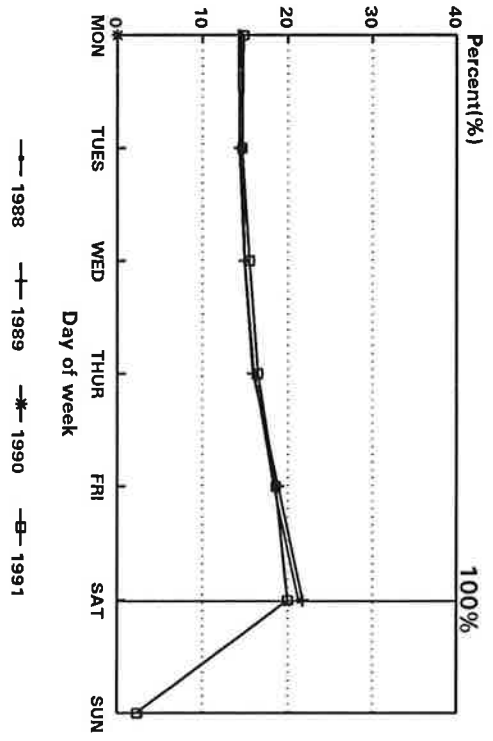
**FLOWS BY DAY OF WEEK 1988 - 1991  
TESCO HOOKWOOD**

Figure G.2

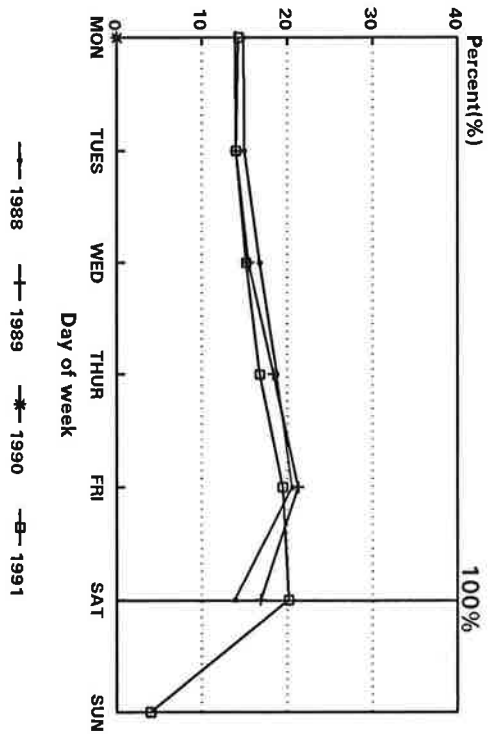
WEEK 1



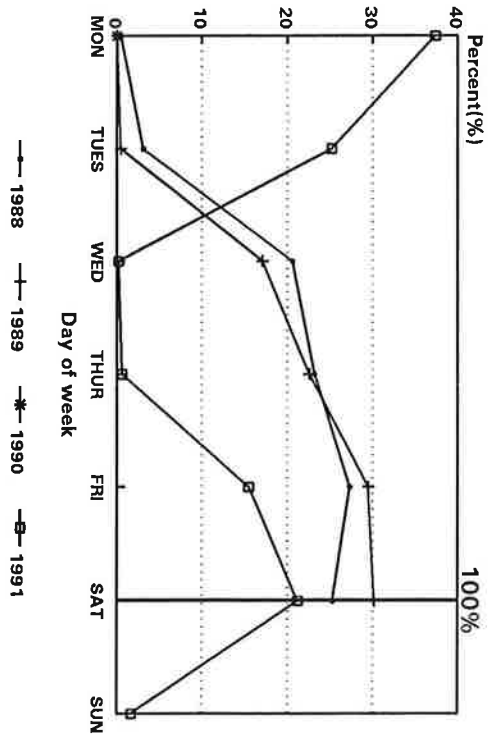
WEEK 2



WEEK 3

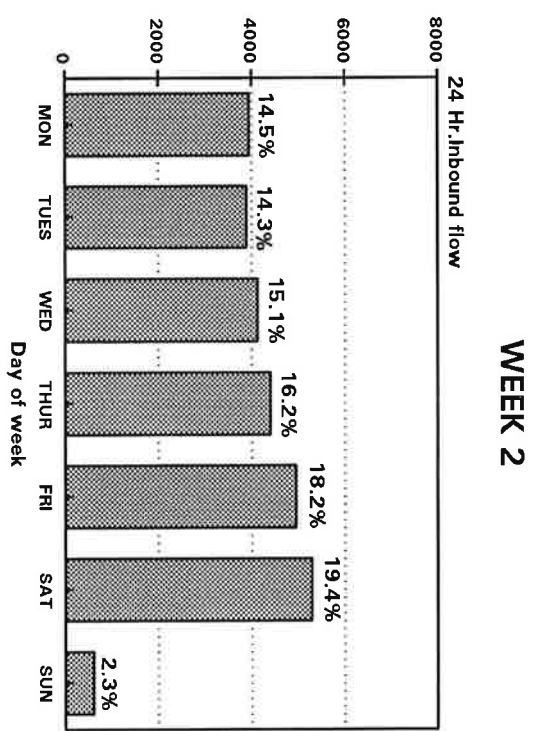
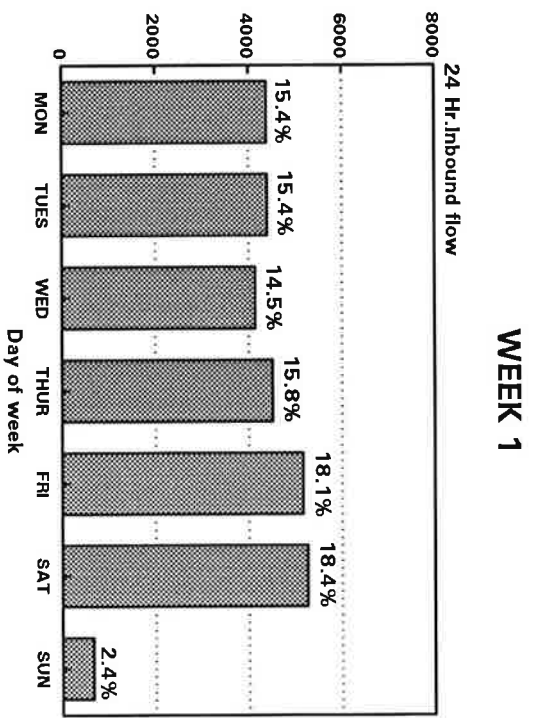


WEEK 4

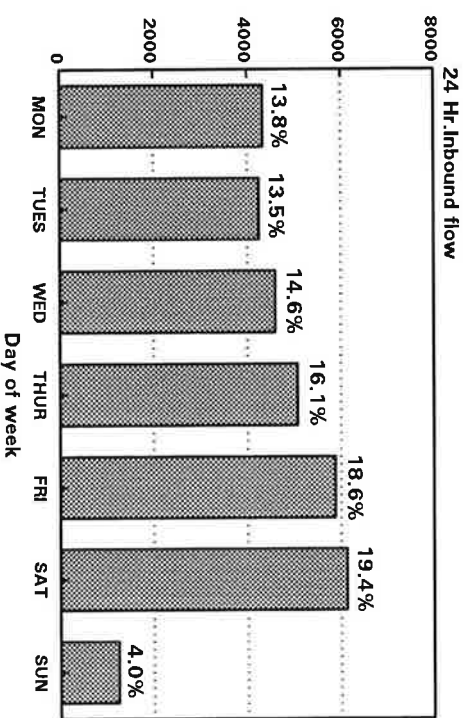


PERCENTAGE OF FLOWS BY DAY OF WEEK 1988 - 1991  
TESCO HOOKWOOD

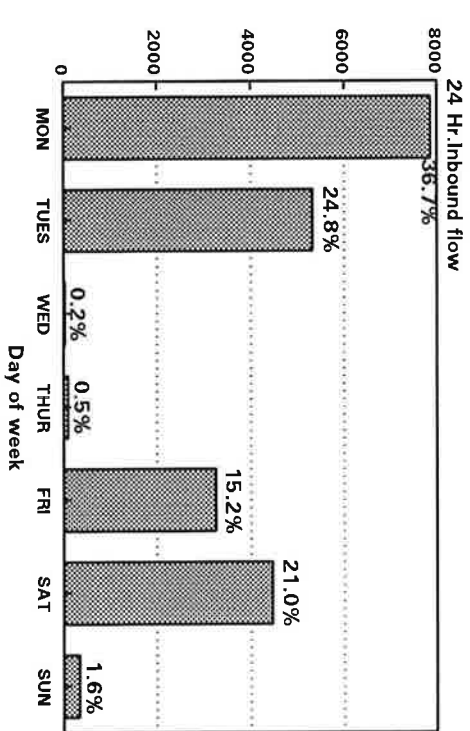
Figure G.3



### WEEK 3



### WEEK 4



**FLOWS BY DAY OF WEEK - 1991**  
**TESCO HOOKWOOD**

**Figure G.4**