

London TravelWatch, TfL Rail and Passenger Focus

Watford-Gatwick Passenger Surveys



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Executive Summary

The Route Utilisation Strategy for the Brighton main line railway includes the suggestion that the Watford – Gatwick service operated by Southern might be truncated at Clapham Junction. The aim of this would be to improve train service performance, by removing the need for this service to cross from slow to fast lines in the Balham area. Key disadvantages would accrue to those passengers travelling across Clapham, however, but any decision on this needs to understand how many such passengers there are, and where they are travelling to.

Following on from previous work carried out by the Railway Consultancy in 2004, London TravelWatch, supported by Transport for London, Passenger Focus and train operator Southern commissioned a repeat set of surveys, which were carried out in early 2006. A full count of the service, covering all trains between East Croydon and Watford, both on weekdays and at weekends, was supplemented by the analysis of a short survey which covered passengers' origins, destinations and trip purposes.

Around 6700 passengers use the service on weekdays, an increase of about 40% on Autumn 2004. Equivalent counts for Saturdays and Sundays saw similar increases to 4500 and 2350 passengers respectively, although it must be recognised that, on Sundays, the service does not operate South of Clapham. Train loadings have risen at around 20%, reflecting greater growth in short-distance trips. However, on average, trains each carry about 60 passengers through Clapham, although peak figures are as high as 250; this clearly contrasts with earlier SRA data (now proved incorrect), which suggested figures as low as 25 passengers per train.

Standing was recorded as compulsory on 8 weekday and 2 Saturday services; on three of these trains, loadings exceeded the planning standard including the PIXC allowance for overcrowding. Peak loadings of around 470 passengers were recorded on each of two a.m. peak services, figures little short of the estimated crush capacity of the Class 377 4-car trains operating the service.

Over half of the reply-paid postcards we distributed were returned, representing a sample of around 1 in 7 of all passengers on the surveyed section of the route. Results confirmed that the demand for the service is still remarkably diverse. In addition to a significant number of commuters, however, business, education and leisure trips all feature, the latter including many passengers with luggage travelling to/from Gatwick Airport. The service is clearly highly valued by its passengers, as witnessed by favourable comments, and passengers arriving very early in order to catch it, rather than travelling via Central London.

The number of passengers actually recorded, together with the two key segments for whom an interchange would be especially onerous (commuters and those travelling to/from Gatwick) imply strongly to us that trains should not be terminated at Clapham Junction, a station which is already congested and inappropriate for the mobility-impaired. Indeed, expansion of through services (either temporally, with the resumption of a.m. peak trains running to East Croydon, if not Gatwick), or geographically (to recommence through-running to stations North of Watford) are both options which appear to be worth considering. In addition, capacity needs to be increased, either by enhanced frequency, the provision of additional shuttle services, or train/platform lengthening.

Watford-Gatwick Surveys

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1 Background

- 1.1 The Strategic Rail Authority published a draft Route Utilisation Strategy (RUS) for the Brighton main line in September 2004, as one of a number of strategies designed to take an analytical look at the main railway routes in Britain in turn, examining both the demand for services (both passenger and freight) and the capacity available. One particular suggestion which concerned the London Transport Users Committee (LTUC, the predecessor of London TravelWatch) was the proposed truncation of Southern's Watford – Gatwick service at Clapham Junction. This service (which runs through to Brighton for much of the day) calls at Harrow & Wealdstone, Wembley Central (peaks only), (Kensington) Olympia, West Brompton, Clapham Junction, East Croydon and other stations on the Brighton main line. It provides a regional link on the West London Line North of Clapham, whereas local services between Clapham and Willesden are provided by Silverlink.
- 1.2 LTUC commissioned the Railway Consultancy to carry out surveys and passenger counts of all Southern services on the West London Line. Our report was completed in November 2004, and indicated that passenger demand was considerably higher than that reported by the SRA. In particular, the SRA's suggestion of terminating trains at Clapham had been based on an estimate that only 25 passengers per train travelled through Clapham; our equivalent weekday figures were 38 Southbound and 68 Northbound. As a result, we came to a different conclusion about the value to passengers of the service.
- 1.3 Since then, the SRA has been wound up, and responsibility for the production of RUSs transferred to Network Rail. Operational issues (in particular, the current switch of the service between fast and slow lines at Balham) have instead been mentioned as a rationale for truncating the service. However, London TravelWatch was becoming aware of continuing growth in passenger numbers (resulting in complaints about overcrowding), and therefore, with the support of Transport for London's Rail section, Passenger Focus and train operator Southern, commissioned the Railway Consultancy to carry out a repeat survey and analysis.

2 Survey Method

- 2.1 As with the previous survey, this project covered two slightly different tasks. The first was to carry out boarding and alighting counts on every weekday, Saturday and Sunday train between Watford Junction and East Croydon; the second was to conduct a limited passenger questionnaire, in order to understand better passengers' trip patterns.

On-Train Counts

Survey Method

- 2.2 The count programme was organised through February and March 2006, avoiding weekday counts during the two half-term weeks as far as possible. As before, the proximity of sporting venues and Earl's Court and Olympia exhibition centres generated some off peak traffic, but the virtually-continuous nature of some form of traffic generator at these locations meant that surveys were not programmed to avoid anything in particular. However, noticeable numbers of passengers were recorded travelling to Chelsea's home game on 25th February, and to the Wedding Exhibition.
- 2.3 Whilst counts (and, indeed, the passenger survey described below) were limited to the route section East Croydon – Watford, all passengers travelling over that section was covered. We were therefore able to garner information about passengers making longer journeys, as well as being comprehensive over the line section of most interest.
- 2.4 The boarding and alighting counts were carried out by Railway Consultancy staff on board the trains. On-train counts were felt to be the most cost-effective way of obtaining the required information. However, they had another significant advantage: on-train counts (providing a check on the on/off counts) could also be undertaken by the same staff. This latter was particularly important given the relatively large numbers of passengers boarding and alighting at some stations, especially Clapham and Olympia.
- 2.5 Unfortunately, the curvature of the platforms (16/17) at Clapham Jc means that it is not possible to stand at one end of the train and observe all doors simultaneously; rather, a position in the middle of the train was taken, and an attempt made to look both ways at once. In addition to that, both boarding and alighting takes place in significant numbers, so the figures for Clapham should only be regarded as estimates, as it might be necessary to use as many as three people per train in order to be absolutely sure of all passenger flows, and the resources needed to do that were not available.
- 2.6 In addition, it was discovered that, demand having risen, the peak trains were now so busy that walking through the trains to count passengers was not always possible. On the worst-affected train (the 0824 from Clapham), we therefore counted each carriage separately, although unfortunately it was not possible to undertake all the counts on the same day. At shoulder-peak times, some trains load irregularly between the carriages, and platform staff (especially at Watford) could help matters by spreading passengers out along the train; the front carriage of Southbound trains can be particularly overcrowded if a disproportionate number of Watford boarders use it, as being nearest to the platform entrance.
- 2.7 However, any errors were minimised through a strategy of carrying out additional on-train counts, both between Croydon and Clapham, and between Olympia and Wembley/Harrow (and sometimes also between Clapham and West Brompton); this enables a cross-check to be made against the train loadings which one might estimate from the boarding and alighting counts. In addition, the smaller numbers of passengers using the other stations means that figures there are much less likely to be incorrect.
- 2.8 Nevertheless, train-specific data should be treated with some caution since there is clearly some day-to-day variation (at least $\pm 10\%$) for the same trains.

- 2.9 Traffic to/from Wembley is currently buoyant, but some of this is directly associated with the building programme for the new National Stadium, currently employing 3000 people during construction. We are not convinced that (apart from at events) passenger demand levels at Wembley will remain sufficiently high to make all-day stops there worthwhile.

Other Services on the Lines Affected

- 2.10 As a further check on the apparently-excessive levels of overcrowding on peak Southern services, we did also note down some figures for Silverlink services from Clapham Junction, even though these leave from platform 2 (as opposed to platform 17) and might therefore be attractive to different passenger groups (e.g. those arriving at the Grant Road entrance to Clapham, or alighting from Windsor-side SWT trains).
- 2.11 Any decision as to what to do with the Gatwick-Watford service must also take into consideration the other services running in parallel with it. Southern are known to have capacity problems on their metro services, in particular, and are understood to be adding some stops to p.m. peak Southbound trains from Watford, in an attempt to even out loadings between trains.
- 2.12 Silverlink's West London Line services have also been suffering from severe congestion, such that Transport for London have paid for additional services to relieve this. However, counts of these trains on Monday 27th February showed them to be over-loaded too:
- | | |
|---------------------------|----------------------------------------------|
| 0805 Clapham – Willesden: | departed 08:05:17, left 68 passengers behind |
| 0818 Clapham – Stratford: | departed 08:18:05, load 267 passengers |
| 0835 Clapham – Willesden: | 218 passengers alighted at Olympia alone |
- Unfortunately, due to suspension of the District line service to Olympia, and the failure of the 0754 Southern service to Watford at North Pole Junction that morning, it is not clear whether these loadings are truly representative of normal operations.

Operational Problems

- 2.13 In addition to services being cancelled owing to planned engineering work on one of the weekends, a range number of operational problems were encountered during the survey period which caused difficulty in surveying – and, presumably, for passengers too. A lineside fire at Harlesden, a suicide at Clapham Junction, and service terminations at North Pole when the pantograph could not be raised all disrupted completion of the surveys. Poor train service performance must impact on patronage in the medium term.
- 2.14 In total, of the 104 trains we attempted to survey, 6 were cancelled. Although this is an improvement on the reliability figure of only 91% recorded in the last survey, it does highlight the vulnerability of this service to disruption. Whilst some of the delays were caused by non-railway factors, consideration should be given to investment in a facility which allows the pantograph to be tested (even only if for raising and retraction, without power) in the depot, as this is clearly an ongoing cause of problems.

Passenger Survey

Questions Asked and Response Rates

- 2.15 The main aim of the survey was to record trip pattern information only. The survey was therefore kept very simple (see Appendix A), and was almost identical to our previous survey. Although containing the same five questions, the order of two of these was changed, in order to make the sequence of questions easier to understand. Four of the questions related to origin and destination stations (separate questions asking about where passengers had started their journeys, and where they had boarded this service, for instance), whilst the other question was about journey purpose. Passengers could leave a contact name and phone number if they either wanted to express their views at greater length and/or be entered into a prize draw for rail travel vouchers. The latter of these was intended to stimulate the response rate, but the brevity of the survey, and the

ability to hand survey cards straight back to the on-train staff (instead of returning them by reply-paid post) meant that response rates were relatively high anyway.

- 2.16 Of about 6700 weekday passengers boarding these services between Watford and East Croydon (in either direction), completed survey forms were received from around 810 of them, a market coverage rate of nearly 12%. 1130 cards from the 7000 weekend passengers were also received, a coverage of 16%. As only 3770 survey cards were handed out, a total response rate of 51% was achieved; this extremely high rate was due to the simplicity of the questionnaire, and the presence of on-train staff able to assist with completion and to collect completed forms.
- 2.17 The cards were numbered, to enable analysis and the follow-up of any queries to the relevant staff member.
- 2.18 After our experience with the previous survey, we swapped the order of two of the questions. Nevertheless, a number of errors in passengers' responses still needed to be corrected. For instance, some passengers on their return journeys entered the start station of their outward journey as their ultimate origin, but this data was easily recognised and was amended manually, although recorded as a manual adjustment. Similarly, passengers specified stations where they had boarded as stations where the train had not stopped, but were instead stations where they had boarded connecting services; again, corrections were made.
- 2.19 The blank data fields for journey purpose also required some coding into our categories of work, business, education, Visiting Friends & Relatives (VFR), holiday, and leisure, but the ability for passengers to include comments did assist our insights into the use of the service.
- 2.20 From passengers' survey responses, we recorded a variable if the trip crossed Clapham such that it would be affected by the proposal to terminate the service there. Aware that other service proposals under consideration also include the re-extension of services North of Watford, we created a similar variable for trips crossing Watford Junction.
- 2.21 Two cards related to problems with staff en route which were sufficiently serious that we passed these comments directly to Silverlink's Group Station Manager at Watford.

Analysis

- 2.22 Reflection on the previous surveys led us to recognise that there was potentially a bias in the responses received. Passengers travelling shorter distances are relatively less likely to be handed a questionnaire than those travelling longer distances, and are also less likely to complete them on the train (thereby reducing the sample return rate). In addition, on a few of the busiest peak trains, conditions were so crowded that it was not possible to move through the train and distribute postcards in the first place.
- 2.23 We therefore considered how this bias might be removed. The technical solution developed is a form of the FURNESS statistical matrix manipulation method, which alternately factors matrix cells to be controlled to origin and destination totals. This means that responses from Origin:Destination pairs which are under-sampled are strengthened, whilst those from over-sampled O:D pairs are weakened. The control data available here was of course the on-train passenger counts; importantly, they also enabled us to control for Northbound and Southbound traffic separately.

Summary

- 2.24 Despite the range of technical and operational problems mentioned above, we believe that the results described in section 3 of this report accurately reflect current conditions on the West London Line. Our counts did cover virtually every train on the route for the entire week, and the on-train counts provide a good cross-check on the boarding and alighting figures. Similarly, the postcard survey response was sufficiently large that it is

unlikely not to provide a valid estimation of the types of trips made on the line, especially with the statistical adjustments made. Whilst it is possible that individual items of data are incorrect by as much as 10%, our judgment is that it is extremely unlikely that aggregate data is incorrect by more than 1%.

3 Results

Passenger Survey Responses

Trip Patterns

3.1 The Watford – Gatwick service carries passengers making a remarkably diverse selection of trips. In addition to long-established commuting flows to Olympia, the line has both significant business and leisure use, spread across a huge range of journey origins and destinations. With Watford Junction, Clapham Junction and East Croydon all having significant interchange possibilities, passengers from across much of the national rail network are using these trains, whilst interchanging at West Brompton also leads to trips to/from a range of London Underground destinations. Summarised trip matrices for weekday, Saturday and Sundays are shown separately in Appendix C, although the data for Clapham Junction is of particular interest to this study, and is summarised in Table 3.1.

Clapham Junction itself	31.0
Southern inner*	21.6
SWT inner	21.0
SWT Windsor lines	9.5
SWT mainline	8.5
Southern outer+	8.0
Other	0.6

Table 3.1. Origins/Destinations of Passengers Boarding/Alighting from Watford services at Clapham Junction (%)

N.B. This data excludes passengers travelling only South of Clapham

* nearly half of these are to/from stations to (and including) East Croydon, stations which will from June 2006 be served by at least one through train

+ one-third of these are to/from stations already served by some trains in this service

3.2 A handful of weekend passengers were noted making use of this service in the absence of through Virgin CrossCountry trains, which were split between Banbury and Leamington Spa with a substitute bus, which clearly was not universally popular. This, however, highlights the value passengers place on avoiding interchange, although perhaps more notable in this context was the behaviour of some of the significant numbers of passengers with luggage accessing Gatwick Airport. For them, a lack of interchange is highly valued, as can be seen from the length of time they are prepared to wait at Watford to get the direct trains. It is quite common for passengers to be awaiting the arrival of the train at Watford, even though it typically spends 30 minutes there and it would have been quicker for passengers to have travelled via Central London in the meanwhile, so we can deduce something about their interchange penalties.

3.3 In addition to the significant flows to/from/via the Brighton main line, there were also quite a few passengers travelling from outer-suburban stations North of Watford, particularly including Berkhamsted, Hemel Hempstead, Milton Keynes and Northampton. Although interchange at Watford is relatively easy physically, some of the connections are either too tight or too slack, and through-running North of Watford (e.g. to the new bay platform now under construction at Milton Keynes Central) should not be ruled out. This is particularly the case in scenarios where there are fewer Virgin West Coast services calling at Watford and/or Milton Keynes, and where additional train services are needed on this line section.

3.4 It is also salutary to note a number of responses by passengers who were apparently on the wrong train (particularly Northbound, with passengers for Victoria found on trains going to Watford); further improvements to information (both by staff and other means) are necessary, perhaps by emphasising at East Croydon that these trains do not go to Victoria.

- 3.5 Some passengers were recorded travelling to Shepherd's Bush, and were looking forward to the opening of the new station there. However, that and the new station at Imperial Wharf, also due to open within the next 12 months, will further stretch capacity on the line, even if only Silverlink trains call there.

Journey Purposes

- 3.6 We were also able to analyse journey purpose, where the significance of commuting ("work") during weekdays is in stark contrast to the leisure emphasis of the weekends. However, the relative importance of work trips appears to have fallen, with trips for leisure and Visiting Friends and Relatives (VFR) purposes increasing, compared to our previous survey. The high proportion of personal business trips at weekends during the current phase of work was driven by exhibitions at Olympia.

purpose	weekday		Saturday		Sunday	
	records	%	records	%	records	%
work	355	42.8	84	9.7	18	6.9
business	116	14.0	36	4.2	15	5.8
education	34	4.1	10	1.2	9	3.5
escort	4	0.5	1	0.1	0	0.0
pers bus	24	2.9	61	7.0	59	22.7
shopping	3	0.4	12	1.4	3	1.2
leisure	68	8.2	285	32.9	46	17.7
VFR	95	11.5	216	24.9	78	30.0
holiday	46	5.5	77	8.9	4	1.5
home	12	1.4	6	0.7	0	0
not stated	72	8.7	79	9.1	28	10.8
total	829	100.0	867	100.0	332	100.0

Table 3.2. Journey Purpose by Day of Week

- 3.7 There is also a difference in journey length between weekdays and weekends, with the greater number of relatively short cross-London work trips (e.g. Clapham – Harrow) contrasting with longer leisure trips (many of which are to/from Gatwick). Both Harrow and Watford Junction are now clearly acting as North London railheads for Gatwick. However, part of the reason for the difference in journey lengths is the different level of service offered; Gatwick trips are much less evident on Sunday, when the service already terminates at Clapham Junction, so the additional interchange required there significantly reduces the benefit of avoiding Central London.
- 3.8 Having reduced the response bias as explained in section 2, it is then possible to set out the main results. Because of the statistical manipulations made, these results are not a direct reflection of the data summed across the postcards received. In addition, we can be sure that they do not reflect exactly the correct trip pattern or distribution of journey purposes. However, we do know that they provide estimates of both of these sets of results which are less biased than directly-sampled data, and are therefore likely to be very close indeed to the true journey pattern.

Other Comments

- 3.9 Improvements to train frequency were mentioned by passengers in additional (unsolicited!) comments, as was the overall importance of the service to them, avoiding Central London. Overcrowding would presumably have been raised as an issue, if we had been able to hand out postcards on the busiest trains in the first place. Complaints were also received about the state of Olympia station, which (despite being fairly busy) is often unstaffed, has poor (e.g. ticket-purchase) facilities, few if any announcements (even when the District line was suspended) and poor directional indicators. The only other issue which became apparent was the low proportion of train toilets in working order; train diagrams need to be revised in order to ensure that these trains are

serviced in a depot with toilet discharging facilities more regularly, rather than leaving the trainsets outstabled.

Passenger Counts

- 3.10 This data is shown in Figure 3.1. As would be expected, the busiest section of the line is that crossing the river between Clapham Jc and West Brompton. 3300 passengers were counted on Northbound trains and 3400 on Southbound ones, the directional imbalance of the previous surveys largely having disappeared. This compares with figures of 2200 and 2700 respectively in November 2004, demonstrating an increase of between 30% and 50% in that period.
- 3.11 However, train loadings have not risen as much, the change ranging from -5% to +35%. This also implies that the extra patronage is primarily in shorter-distance trips, with an increasing number of seats being used by more than one passenger between Croydon and Watford. Our results are also able to support the hypothesis put forward by London TravelWatch that growth has indeed been strongest in the centre section of the route i.e. between Clapham and Olympia. Unfortunately, it is not clear to us exactly why such a large increase in traffic should have occurred in such a short space of time (compared to background rail traffic growth of perhaps 3%).
- 3.12 The elimination of the directional imbalance is also true of the numbers of passengers travelling across Clapham Junction, which are now just under 850 per day in each direction. November 2004 figures were over 1000 Northbound but only 450 Southbound.
- 3.13 Clapham Junction and Watford Junction are by far the busiest stations on this section of the route, but that is largely a function of the interchange opportunities available at each. In addition, of course, a number of a.m. peak journeys only start from/terminate at Clapham, forcing passengers to change there, even if they are actually travelling to/from other stations which are directly-served at other times of day (such as East Croydon). The figures for Wembley and Selhurst are low, because only peak services call at the former, and one train each way at the latter.

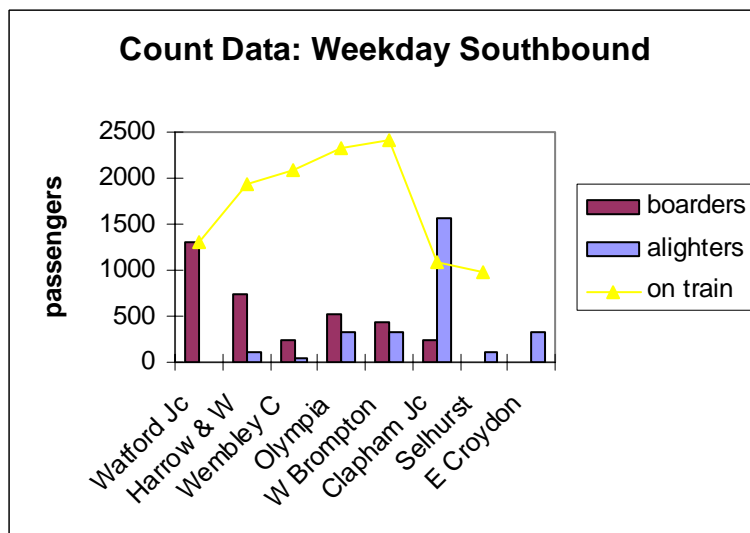
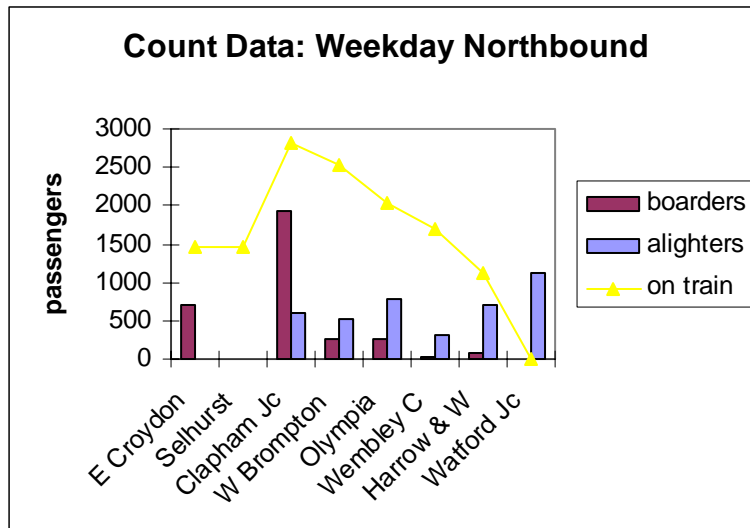


Figure 3.1 Weekday Count Data by Direction

N.B. Graphs show total passengers per day, across all trains.

- 3.14 Count data for weekends is shown in Figures 3.2 and 3.3 respectively; again, the river crossing marks the highest point of demand. Despite football traffic, Saturday demand remains lower than weekday demand, at around 4500 passengers (1700 Northbound and 2800 Southbound) whilst Sunday demand is only about half this level, at 1150 Northbound and 1200 Southbound. However, it should be noted that no trains on Sundays currently run South of Clapham.
- 3.15 Interestingly, the patterns of traffic are also not the same at weekends. On Saturdays, a higher proportion of Northbound demand originates from East Croydon or further South; the large number of boarders at Clapham found during the week are not reproduced. However, this is likely to be largely due to the enforced change by passengers on weekday mornings, when the service operates as a shuttle to/from Clapham; many of the passengers may still be travelling to/from Croydon and South thereof.
- 3.16 This data has been calibrated against data provided by Southern from train weighing equipment. The comparison suggests that the latter typically over-estimates patronage on Watford-Gatwick services by about 10%. The majority of this is thought to be caused by higher-than-average quantities of luggage, but the presence of on-train staff (conductor, cleaner) also contribute to this bias.

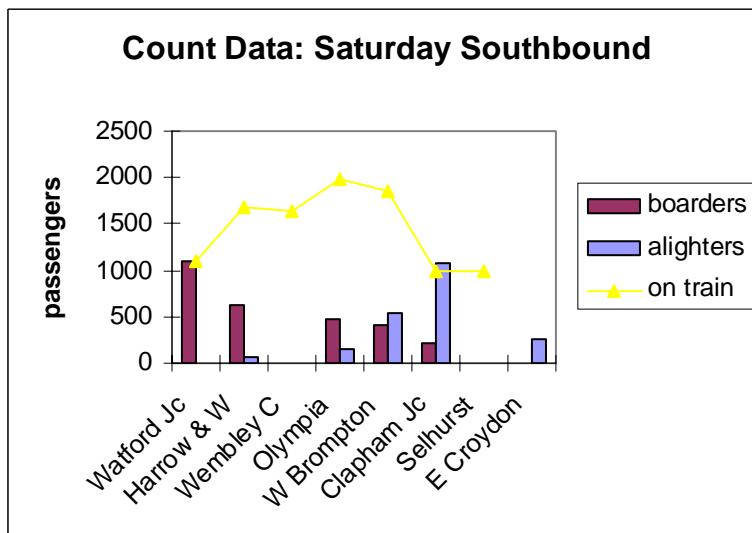
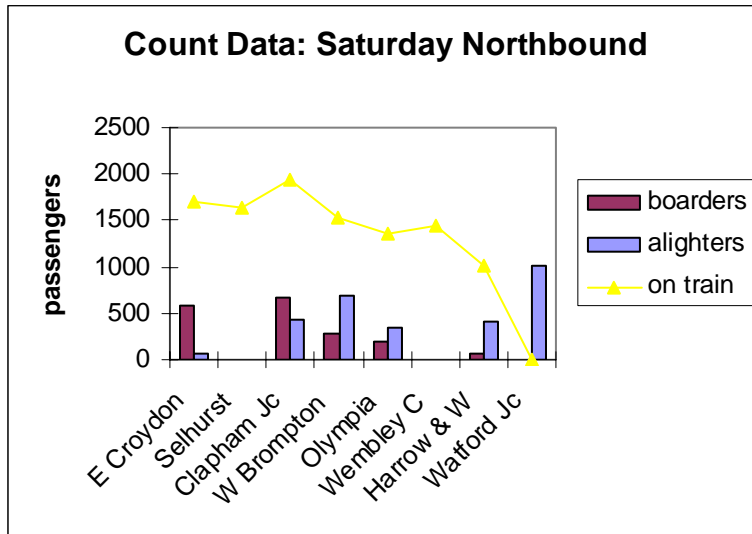


Figure 3.2 Saturday Count Data by Direction

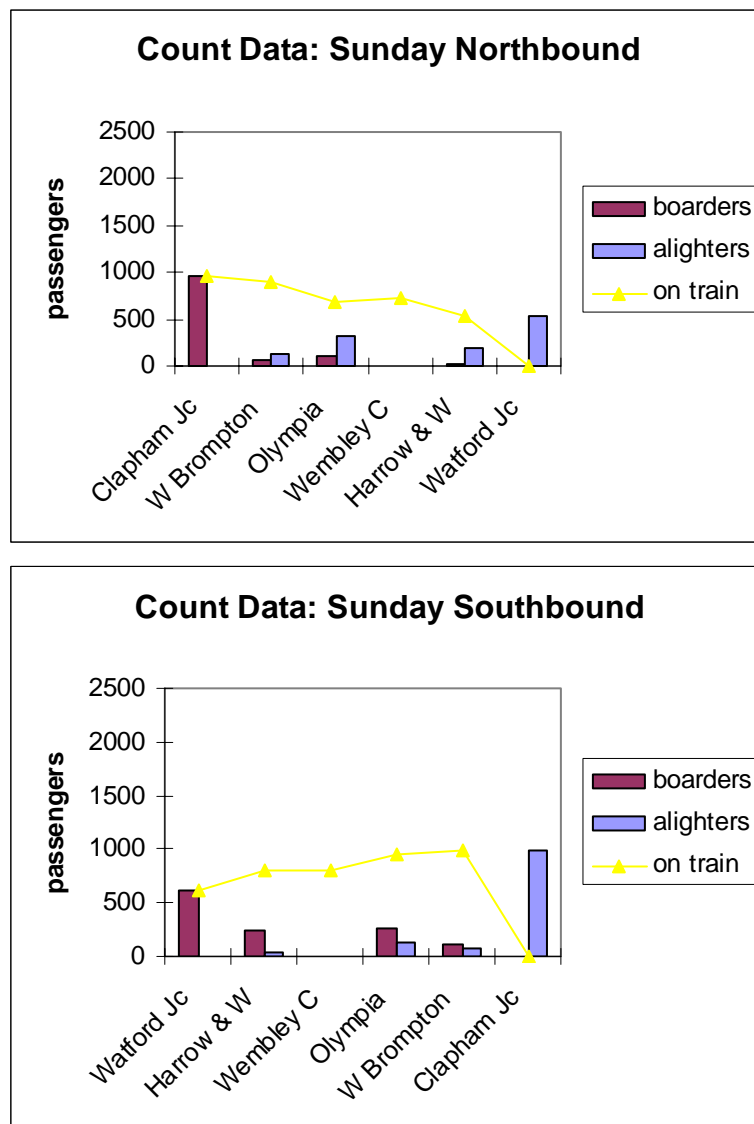


Figure 3.3 Sunday Count Data by Direction

Discussion

- 3.17 Splitting the service at Clapham Junction would be very unpopular with, and would incur substantial disbenefits to, passengers, since there are considerable numbers of them making journeys through Clapham who would then incur an interchange. On average, there are 70 through passengers on Southbound trains during the week, but 56 on Northbound trains; equivalent figures for Saturdays are 44 and 75. All these figures are considerably higher than the 25 per train noted in the SRA report, and (because they are averages) notably lower than the maximum recorded (169 on weekday, 253 on Saturday).
- 3.18 Typical amongst these through trips are business trips to/from the Olympia/W Brompton area, and trips between, and giving access to other rail services at, the key centres of Croydon and Watford.
- 3.19 More significantly, there are two categories of passengers for whom the interchange would be especially onerous:
- (i) commuters;
 - (ii) airport access passengers.

We are aware of evidence from elsewhere which suggests that imposing an interchange on commuters can reduce demand by 33% in the long term, whilst we would expect the luggage and other requirements of airport access passengers clearly to make them more sensitive to interchange than other leisure passengers. Responses from Gatwick passengers included both those on pure leisure trips, and those on personal business, from countries around the world.

- 3.20 It became clear from talking to passengers that the availability of flights to particular destinations is not similar across the London airports. This means that many people have to travel across London to reach the appropriate airport. In particular, many flights to Ireland go from Gatwick, and many of those passengers are accessing Gatwick by rail from Watford and Harrow.
- 3.21 As an initial estimate of the total value of the disbenefit of interchange enforced by terminating all trains at Clapham, we have taken an appropriate interchange value of 15 minutes per interchange (table B3.7 of the Passenger Demand Forecasting Handbook) and multiplied it by the total number of passengers currently remaining on trains through Clapham. Our counts show 1681 passengers travelling through Clapham each weekday, with a further 2060 on Saturdays. In total, this would lead to about 460,000 through passengers p.a., whose value of interchange is approximately 115,000 hours at a Value Of Time of about £6/hour. The economic benefit of not terminating these trains at Clapham is therefore around £800,000 p.a., although if the service were to be curtailed, some existing passengers might find another route which was better than continuing to travel via (and change at) Clapham, thereby reducing the disbenefit to them. This, of course, excludes any revenues which are directly attributable to the through service.

Comparison with SRA data and Implications for the RUS

- 3.22 The purpose of the Route Utilisation Strategies (RUSs) is to attempt to balance operational and financial considerations against passenger benefits. Operational performance is now higher on the political agenda than was the case in the late 1990s and the difficulties of operating the Gatwick-Watford service are now apparent. Foremost amongst these is the current switch of the service between fast and slow lines at Balham, which does prevent trains running on other tracks and was observed in other work we have carried out for Southern to cause delays. However, the train loadings and passenger journeys we have surveyed indicate a very strong case for continuing to run through services at least between Watford and East Croydon, and preferably to Gatwick.
- 3.23 The SRA have presented their data graphically, showing both passenger movements at stations and on-train loads. We thought it would be helpful to present our data in a similar format; this is shown in Figure 3.4, and can be compared with our equivalent data shown in Figure 3.1.

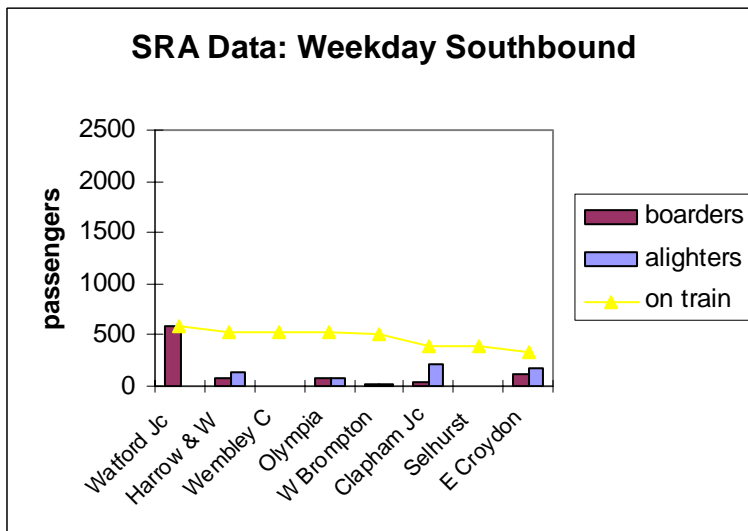
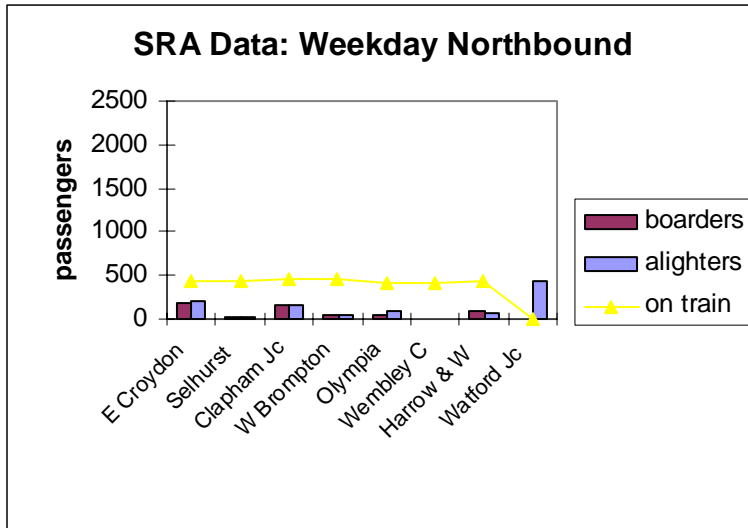


Figure 3.4. SRA Count Data
(source: Brighton main line RUS, p.14)

- 3.24 Continuing demand growth now makes the original SRA data even less representative of actual conditions than when it was first made public. Our count figures are now between four and five times those shown by the SRA in the Brighton Line RUS (p. 14). It also shows a different profile over the route, with the SRA's Southbound data tailing off from Watford, whereas in reality more passengers board than alight. We can therefore conclude that the SRA data is not an appropriate basis on which to examine the value of this service.
- 3.25 Actual data demonstrates passenger loadings far higher than implied by the earlier data. Importantly, it is also clear that a number of trains have passenger loads in excess of their seating capacity; these are listed below. Passengers are now beginning to be left behind on some of these services, whilst conditions on them will certainly be deterring others from attempting to travel.

Southbound	max load
07:17 Watford – Clapham	360
07:41 Watford – Clapham	277
17:29 Watford – Gatwick	300
18:12 Watford – Brighton	356

Northbound		
07:57	Clapham – Watford*	470
08:24	Clapham – Watford*	468
09:26	Clapham – Watford	306
17:52	Clapham – Watford	270

*: these services have loads greater than the planned capacity, including standing. Contrary to an article in the Times of 22nd March 2006, these trains would rank amongst the top ten most crowded trains in the country.

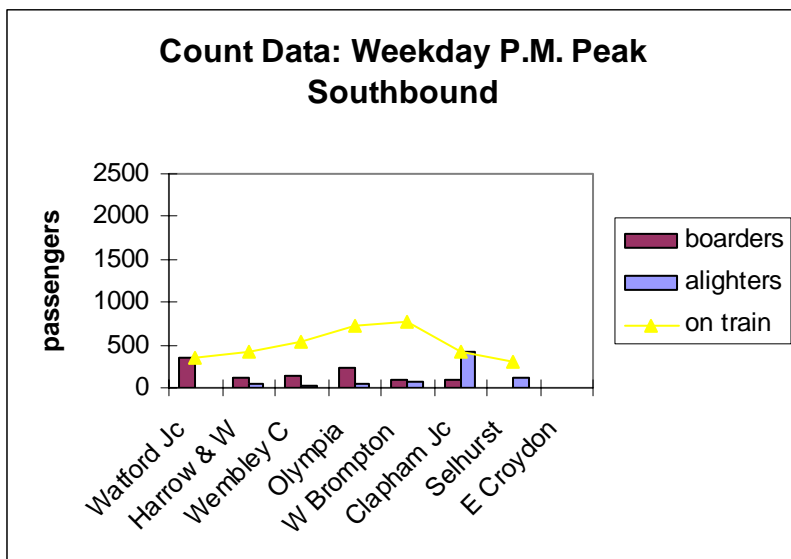
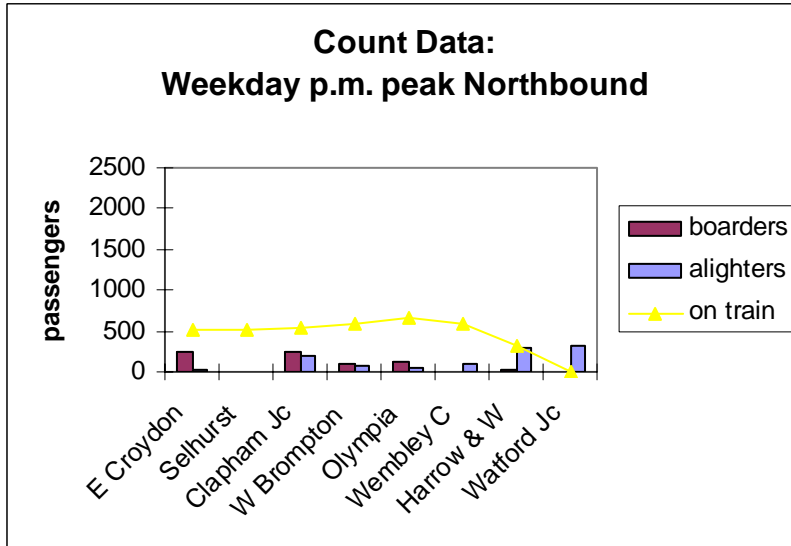


Figure 3.5. Counted Train Loading Data for the P.M. Peak

3.26 If operational issues are of concern, then this is most likely to be the case in peak periods, when Southern operate extra services on both fast and slow lines out of Victoria. However, as Figure 3.5 shows, the three trains involved (total capacity around 780 seats) are, on average, overcrowded, and about half of these passengers (about 150 passengers per train) are travelling across Clapham. Splitting the service would be a major disadvantage for these people, and would create additional problems in managing passenger flow at Clapham Junction station itself. We therefore support Southern's efforts to ensure that these trains carry a full complement of passengers South of Clapham, by making additional calls to relieve other suburban services.

- 3.27 Development of the RUS therefore needs to address the question as to how to satisfy demand/overcrowding and financial criteria without prejudicing service performance (of this, or other services). Importantly, however, with the railway functioning as a system, the impact on station operations must be considered as much as the impact on train services.
- 3.28 We believe that insufficient thought has been given to station capacity issues in the past, and challenge the assumption that large numbers of passengers would be able to change at Clapham Jc, if the service were split. We have already seen the levels of demand in the morning peak, where this currently occurs, and we believe this to be misguided. Not only is platform 17 narrow and curved, with a step/gap which fails the mobility-impaired regulations by a wide margin, but access to both the subway and footbridge is both narrow and by stairs, and causes very significant congestion. Figure 3.6 gives an indication of the levels of congestion reached on a Sunday, on the less-crowded Southern end of the platform; weekday peak conditions are correspondingly worse.



Figure 3.6 Platform Conditions at Clapham Junction, platform 17

Possible Solutions

- 3.29 Clearly, an *immediate* increase in train service capacity is needed on the West London Line. In addition to the current overcrowding, extra demand will be generated on the complementary Silverlink services when the stations at Imperial Wharf and Shepherds Bush open within the next year or so. Rail demand is growing by around 3% p.a. anyway, and it is likely that there is demand on this route suppressed by the levels of overcrowding. In addition, the relatively-low service frequencies offered suggest that additional demand would be generated by an increase in frequency.
- 3.30 Transport for London have already funded additional services designed to reduce overcrowding (e.g. the 0718 and 0818 from Clapham to Stratford via Willesden), but further service enhancements will be needed to manage the extra demand. One possibility is the use of a 4-car dc trainset to make additional shuttle journeys between Clapham and Olympia. Spare Class 458 units exist, and could run a couple of additional trips in each peak, running empty or shunting out of the way in the contra-

peak direction if necessary. However, this solution does not address the clear issue that significant demand exists for travel across Clapham.

- 3.31 Although we acknowledge the rolling stock shortage that Southern currently have, an alternative (or even additional) solution could involve the operation of an extra service from Selhurst (calling at all stations) in the morning peak. This could provide significant overcrowding relief to a number of train services and to Clapham Junction station too¹, and would be particularly attractive to the not-insignificant numbers of passengers travelling between these stations and Olympia. Running immediately in front of (and providing relief to) the 0734 from Selhurst, this service could run through to Olympia, leaving Clapham at (say) 0748. Unfortunately, this train would have to shunt to the centre road at Olympia, leaving behind the 0806. However, it could then run empty to Clapham to provide another service at around 0830 from platform 17, immediately following (and therefore providing some relief to) the grossly-overcrowded 0824.
- 3.32 In the longer-term, there are various plans to increase train length. If platforms were lengthened at Olympia, West Brompton and (most problematically Clapham Junction), Southern might operate 8-car train formations on this route, whilst TfL's plans to use 4-car trainsets on local WLL services will also provide additional capacity. However, this study emphasises the point that current overcrowding levels require some action to be taken before these new options become available.
- 3.33 In addition, of course, TfL's proposals do not address the issue of travel to/from Watford. Increasing the frequency to half-hourly could be worthwhile, as additional demand would be generated and/or diverted from current flows through Central London. As these latter also tend to be congested, an improvement in Watford-Clapham (or beyond) services would have wider benefits – e.g. to London Underground.
- 3.34 We have had a preliminary attempt at re-pathing these services on the slow lines throughout to Gatwick Airport. In the Southbound direction, the combination of running one minute earlier, and the elimination of the wait at Olympia or Clapham enables a reasonable path to be found all the way to Gatwick, albeit arriving seven minutes later than now. However, it is more difficult to find appropriate paths through East Croydon in the Northbound direction without adding around 15 minutes to end-to-end journey times. Nevertheless, given the value placed by passengers on through services (a value demonstrably as high as 30 minutes for some of them), this is still worth considering.
- 3.35 Because of station management issues at Clapham, we conclude that it is essential that this service runs through to East Croydon (which has better facilities, good connectional opportunities and which is a key traffic centre anyway) and that the service reaches Gatwick. It is important that demand south of East Croydon is looked at in light of the Brighton RUS. When major timetable re-writes are in prospect, these requirements need to be taken into account.

¹ It is understood that the peak loading point for many Southern suburban services is actually South of Clapham Junction, and not approaching Victoria, so these suggestions are applying resources to the route sections where they are most needed

4 Conclusions and Recommendations

Conclusions

- 4.1 Further to previous work in October 2004, on-train counts and passenger surveys using reply-paid postcards were carried out on the Watford-Gatwick service during February 2006. These have demonstrated very dispersed trip patterns, but an overall level of demand significantly higher than some previous estimates, with a flow of over 2500 passengers per day (an average of around 120 per train) using the service across the Thames between Clapham Junction and West Brompton in each direction. Saturday and Sunday flows are respectively around 1900 and 1000 in each direction.
- 4.2 Service reliability continues to be an issue (even if not driven by events directly within the railway's control), and we believe that patronage is being suppressed as a result. In addition, further demand is suppressed because the service is not always timetabled to run South of Clapham, and we believe that this also leads to some passengers also not using it, even when it is available. Most importantly, however, overcrowding on peak trains is so severe that passengers are being left behind, and yet further peak demand is likely to be deterred by this overcrowding. Two trains (the 0757 and 0824 from Clapham) now carry around 100 passengers more than their planned capacity (including standing), at 460-470 passengers in a 4-car train. Six other services have more passengers than seats, including services in both directions in both peaks.
- 4.3 Passenger boardings have risen by 30-50% in the last 18 months, but train loadings have changed only by between -5 and +35%, the upper end of this range occurring on the central section between Clapham and Olympia. There is then some evidence that there has been disproportionate growth in shorter-distance trips recently.
- 4.4 Nevertheless, despite this, the average number of passengers remaining on the trains through the stop at Clapham Junction is now over 60. This applies both to weekdays and Saturdays, and for both directions, and these figures are considerably higher than those originally presented by the SRA. The service is also used to provide a direct link between North West London and Gatwick Airport, and this service is highly valued by passengers, some of whom arrive over 30 minutes before departure.
- 4.5 As a result, the SRA's deduction that it might be in the overall interest of passengers that these services might be terminated at Clapham Junction (in order to improve operational performance) must be seriously challenged, because the balance between demand and operability is clearly substantially different from that which it has assumed. The economic benefit of the through service is currently around £800,000 p.a. in terms of time alone.
- 4.6 The demand for this service is likely to grow further through a combination of background growth, the opening of additional stations at Imperial Wharf and Shepherd's Bush, and improvements in service reliability, frequency, speed and the service hours for through trains.

Recommendations

- 4.7 In the short-term, immediate action is needed to supplement the capacity of the service. Options include the operation of additional shuttle services from platform 2 at Clapham, and the through-running of extra trains to/from Southern's core suburban network during the peak. In the longer-term, TfL's use of 4-car trains on WLL local services is essential, but this may only provide sufficient capacity to deal with the extra demand from the new stations, and may not address the shortfall of capacity on Southern services at all.
- 4.8 The level of demand to/from Croydon and Gatwick is sufficiently large that attempts should be made to re-path this service to continue to serve these destinations. Preliminary analysis suggests that this can be done at a time penalty of 7 minutes Southbound and 15 minutes Northbound. However, it should be noted that these values are much less than the value clearly placed on the avoidance of interchange by

passengers noted waiting over 30 minutes for these trains, in preference to travelling via Central London.

- 4.9 The capacity and operability of Clapham Junction station (in particular, platforms 16 and 17) must be taken into account when examining future options.
- 4.10 Stopping this service throughout the day at Wembley Central may not be worthwhile, as indications are that a considerable proportion of existing traffic there is associated with the building programme for the new stadium.
- 4.11 The RUS therefore needs to consider carefully the cost-effectiveness of options for this service, with the aim of continuing to provide it, even if at longer overall journey times.
- 4.12 Southern should also consider ways in which pantographs can be tested at depots such as Lovers Walk, in order to minimise the number of cancellations caused by difficulties with this equipment when first used at North Pole Jc.
- 4.13 Southern should amend rolling stock diagrams to enable the more frequent emptying of toilet facilities on the Class 377/2 trains used for these services.

Acknowledgements

Thanks are due to Southern, for providing travel facilities and rail travel vouchers for the prize draw.

Appendix A. Survey Form



5001

On behalf of London TravelWatch

The development of the Watford-Gatwick rail service is under consideration, but we need your help in understanding the trips you currently make on this service. All surveys returned named will be entered into a prize draw.

Thinking about the journey you are making now:

Where did you start your rail/tube/tram journey?

Where did you get on this train?

Where will you get off this train?

What is your final destination station/stop?

What is the purpose of your journey?

If you would like to express your views at greater length, and/ or enter our prize draw for £25 of rail travel vouchers, please give us your name and daytime phone number and tick the relevant box(es):

.....

I am willing to give my views at greater length

I wish to enter the prize draw for £25 of rail travel vouchers

Your personal details will not be used for any other purposes

BUSINESS REPLY SERVICE
LICENCE NUMBER

The Railway Consultancy Ltd
1st floor South Tower
Crystal Palace station
London
SE19 2BR

Appendix B. Journey Information

As can be seen from the tables in Appendix C, the most popular weekday journeys found from analysis of the surveys were Clapham Junction – Watford Junction and East Croydon – Olympia; however, these each only accounted for around 3.5% of the returned forms. It is very unusual for the most popular journey to account for such a small proportion. At weekends, Clapham-Watford trips were of course more popular, because terminating train services at Clapham, reducing the potential market for longer-distance passengers on this service by requiring them to change.

At the other end of the journey frequency spectrum, and to underline the diversity of trip patterns, amongst the more unusual trips recorded and understood to be genuine were:

Harrow & W - Gatwick – Dublin

Coventry – Watford – Clapham Jc – East Grinstead

Fishergate – Brighton – Watford Jc – Barrow-in-Furness

Richmond – Clapham Jc – Watford Jc – Garston (Herts)

Westbury – Clapham Jc – Watford Jc

Milton Keynes – Watford Jc – West Brompton - Southfields

Woodside – E Croydon – Olympia

Gatwick – Watford Jc – Manchester Piccadilly

Tunbridge Wells – East Croydon – Clapham Junction - Harrow

Watford Jc – Clapham Jc – Fareham

Accra (Ghana) – Gatwick – Watford

Welshpool – Watford – Haywards Heath – Eastbourne

Appendix C. Trip Matrices

Weekdays

	S of EC	Gatwick	EC	Sel/SC	via CJ	Clapham Jc	int stas	Watford	N of Wat	Total
S of EC	n/a	n/a	n/a	0	4	20	122	73	155	374
Gatwick	n/a	n/a	n/a	0	24	24	77	45	49	220
EC	n/a	n/a	n/a	0	8	12	155	57	41	273
Sel/SC	0	0	0	0	0	0	4	0	0	4
via CJ	24	4	12	4	n/a	n/a	175	126	77	423
Clapham Jc	4	0	4	0	n/a	n/a	85	118	49	260
int stas	118	57	69	4	102	45	207	27	19	648
Watford	102	37	45	0	167	73	146	n/a	n/a	570
N of Wat	106	57	49	0	102	24	114	n/a	n/a	452
<i>Total</i>	<i>354</i>	<i>155</i>	<i>179</i>	<i>8</i>	<i>407</i>	<i>199</i>	<i>1086</i>	<i>446</i>	<i>389</i>	<i>3223</i>

Saturdays

	S of EC	Gatwick	EC	Sel/SC	via CJ	Clapham Jc	int stas	Watford	N of Wat	Total
S of EC	n/a	n/a	n/a	0	16	5	74	71	97	263
Gatwick	n/a	n/a	n/a	0	11	3	26	45	63	147
EC	n/a	n/a	n/a	0	8	0	47	32	24	110
Sel/SC	0	0	0	0	0	0	0	0	0	0
via CJ	18	39	3	0	n/a	n/a	53	68	60	242
Clapham Jc	0	18	3	0	n/a	n/a	55	39	55	171
int stas	55	47	60	0	123	58	144	87	29	604
Watford	68	63	24	0	92	45	134	n/a	n/a	425
N of Wat	95	34	24	0	74	21	92	n/a	n/a	339
<i>Total</i>	<i>236</i>	<i>202</i>	<i>113</i>	<i>0</i>	<i>323</i>	<i>131</i>	<i>625</i>	<i>341</i>	<i>328</i>	<i>2301</i>

Sundays

	S of EC	Gatwick	EC	Sel/SC	via CJ	Clapham Jc	int stas	Watford	N of Wat	Total
S of EC	n/a	n/a	n/a	0	0	0	5	27	45	77
Gatwick	n/a	n/a	n/a	0	0	0	14	23	14	50
EC	n/a	n/a	n/a	0	0	0	36	5	14	55
Sel/SC	0	0	0	0	0	0	0	0	0	0
via CJ	0	0	0	0	n/a	n/a	86	50	55	191
Clapham Jc	0	0	0	0	n/a	n/a	132	32	23	186
int stas	14	18	9	0	68	50	41	15	7	222
Watford	5	14	0	0	50	27	114	n/a	n/a	209
N of Wat	27	5	9	0	73	5	0	n/a	n/a	118
<i>Total</i>	<i>45</i>	<i>36</i>	<i>18</i>	<i>0</i>	<i>191</i>	<i>82</i>	<i>427</i>	<i>151</i>	<i>157</i>	<i>1108</i>

N.B. The above matrices are derived as direct reflections of the survey results received, grossed up to daily patronage totals