Where is this?

An audit of station name signing

Foreword

by Suzanne May
Chair of the London Transport Users Committee

Familiarity is said to breed contempt. More often, I suspect, it actually breeds a simple lack of awareness of things we take so much for granted that we do not really see them.

How often, for example, do we look at road signs giving directions on routes we know well? Probably never, because we have no need to. The signs are there for the benefit of strangers, not for us. But as soon as we stray from familiar paths, we become strangers ourselves — and then such signs are crucial.

So it is on the railways too. We know the stations we use often, and recognise the scenery at the lineside. So we can tell at a glance where we are in the course of a regular journey, and when we have arrived. But on new journeys we have no such reassuring landmarks to rely upon, and the trip becomes a little more stressful as a result.

That s why good station name signing on platforms is important. But it is a point too often overlooked by those who run our railways. This oversight is probably not deliberate, but simply the consequence of the fact that because railway managers know their stations well, they do not put themselves in the mind-set of travellers who do not share this advantage.

This report documents the findings of a platform name sign audit commissioned by the London Transport Users Committee from the consultancy Information Design Unit of Enterprise IG, who are leaders in the field of good signing practice. It confirms what we had long suspected. The railway companies have no set standards for the number and alignment of such signs. Many stations have too few of them, and they are poorly maintained. They are particularly difficult to see after dark, and from trains passing through stations at high speeds.

The rail system faces many problems. We do not pretend for a moment that poor platform name signing is its greatest single failing, or the one requiring most urgent action. But unlike unpunctuality or overcrowding or lack of personal security, it can be remedied quickly, and comparatively inexpensively. So improving it offers a quick win to managers who want to gain passengers goodwill.

Our report concludes with some recommendations for action. We commend them to the industry, and invite its comments. As always, my Committee is keen to engage in a constructive dialogue with those who run the railway — and is grateful to the managers who spoke to our consultants and assisted them in the delivery of this project.

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The illustrations in this report help to show what is wrong — but also include examples of good practice. I hope that when we come to repeat such an audit in the future, there will be far fewer of the former and many more of the latter. We have described the problem and suggested some solutions. Now it is up to the industry to accept our challenge.

LONDON TRANSPORT USERS COMMITTEE

Comments on this report will be warmly welcomed.

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An audit of station name signing

Prepared for London Transport Users Committee
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Contents

1 The purpose of this report

Passengers using trains need to know when they are nearly at their destination, or have arrived. Many of them also wish to know the identity of locations that they are passing through. In order to do so, they need to be able to see or hear some information telling them where they are — an audio or visual cue. This cue may be an audio announcement, an on-board visual display, something outside the window such as a landmark they recognise, or a station name sign on a platform. Such signs are the most certain and permanent source of such information.

London Transport Users Committee (LTUC) has had concerns about the number and clarity of these signs, especially after dark, and identified the need for an audit of current standards.

1.1 Current sign design practice

In 1986 Network SouthEast produced a corporate identity design guide that included designs for signs at stations. The guidance showed an example of each type of sign, and these were consistently installed at stations in the south-east of England. But the guidance did not include recommendations for the numbers of each sign, or for their positioning and fixing to ensure they are visible from the trains.

Different train operators now operate the rail network and there is no longer a single sign style for all platform signs. Differently branded station name signs have been installed showing the corporate identities of the operators.

Some signs are white with dark text, others are dark with white text, both of which comply with the latest guidance on sign design for people with visual impairments. But many of the newly branded signs are simply installed where Network SouthEast signs were placed, with apparently little thought given to whether their positioning or frequency is adequate to meet passengers needs.

The aim of this audit of station name signs was to find out if those now in place are visible, legible and sufficiently illuminated for the people for whom they are provided — the passengers on the trains.

1.2 The extent of the audit

The audit was limited to National Rail stations (and trains running through them) in the London area. The signs at London Underground s surface-level stations were considered for purposes of comparison, but not audited.

The stations where detailed sign audits were carried out were selected:

- through consultation with the train operators — e.g. stations where new signs have recently been installed, or which illustrate their sign strategies and how they are intending to install station name signs
- from ones that LTUC members have found to be particularly difficult to identify
- to provide an overview of different station types — old, new, small and large
- through IDU s (the consultants) own rail network familiarisation and on-board journeys to identify stations where signs are difficult to see and read from the trains.

Network SouthEast branded station name signs – the graphics on some station signs have not been replaced. Some of the newly branded signs are vinyl applied to the existing Network SouthEast sign product, and many new signs are in the original Network SouthEast sign locations.

The project budget allowed for three days of auditing. Seventeen station platforms and eight different types of train were audited. The audits, together with the consultations with the train operators and document review, have enabled IDU to provide an overview of the current situation and to identify the key issues that affect station name sign design and positioning.

1.3 About this document

This document outlines the audit process, describes its findings, and makes recommendations to help the rail industry provide station name signs that are effective for passengers.

Using the findings in this document, we have developed in our recommendations a template for a specification for positioning, frequency and design of name signs which is based on a single train type and single station, but which can be applied generally to other stations and trains.

1.4 Key findings and recommendations

There is no industry standard for such signing, and increasing variety in its style. The general advice provided by the Health & Safety Executive, the Rail Safety & Standards Board and the Strategic Rail Authority does not cover the spacing and positioning of these signs. Individual train companies manuals are concerned more with consistency of branding than with functionality. London Underground s detailed and helpful Signs Manual has no close counterpart on the National Rail system.

For the most part, the auditors found the current station name signs to be in a fair condition, legible from six to seven metres away, and with sufficient colour contrast to be readable by most passengers during daylight hours. However, the low level of platform illumination after dark (and/or the positioning of signs relative to the lights) was found to cause serious problems with the visibility and readability of signs which are intended to be read from inside trains (and must therefore be seen through reflections on the windows).

Most signs were located at a height of 2.1 metres or more, which meant that they were not visible to most passengers standing on trains (at least without stooping), and that they were liable to be obscured by the horizontal divider found on many of the windows on the trains audited.

The number and frequency of signs on each platform were also found to cause problems. There were often insufficient signs to ensure that at least one was visible from any seat on a train standing at the platform. The placing of signs on opposite platforms is often staggered on the assumption that passengers can view them from the windows on either side of a train, but this takes no account of the fact that the view to a non-adjacent platform can be obscured by the presence of another train.

Larger running in signs at the ends of platforms are useful, but their provision is erratic. Lesser-used stations are apt to be particularly poorly signed. Little thought has been given to the visibility of station names from trains passing through without stopping, though passengers on such trains often wish to identify their whereabouts. Railways overseas are better equipped in this respect, because their stations often have names displayed at right angles to the direction of travel.

Information about stopping patterns is sometimes provided on board, either by signs or announcements. But this is by no means universal, and no substitute for good station signing.

The report concludes with recommendations for the spacing, size, illumination, colour, reflectivity, height and alignment of platform name signs. In order to achieve greater consistency of practice, these are addressed to Network Rail and the Strategic Rail Authority.

2 The audit process

2.1 Document review

IDU carried out a review of the relevant guidance and codes of practice that mention or affect sign design and positioning and are currently used within the rail industry. The findings of the document review are set out in Section 3.

2.2 Train operator consultation

IDU consulted a sample of seven companies who run trains and stations in London to understand their approach to designing and positioning signs. Most have rebranded their station name signs over the last few years, but many have simply replaced existing signs with newly branded versions, rather than reviewing their sign strategy. The seven train operating companies are:

- Wagn
- c2c
- Thameslink
- Silverlink
- Chiltern Railways
- South Eastern (formerly Connex)
- South West Trains.

IDU also contacted a few of the design companies and sign manufacturers that have been involved in recent sign design and implementation projects for train operators to obtain an understanding of their approach to the design and positioning of station name signs.

2.3 Train audits

IDU obtained drawings of different types of rolling stock, spoke to two of the train operators fleet managers and audited the trains in order to understand:

- the seating layouts and space limitations
- the variations in window size, shape and height
- the number of seats without window access
- the location of on-board visual displays giving station name information
- other factors that could affect the visibility of station signs, such as vertical barriers/screens, high seat backs, lighting and reflections on the glass.

We audited eight train types (known in the industry as classes), namely:

- 165 (operated by Chiltern)
- 313 (operated by Silverlink and Wagn)
- 315 (operated by Wagn)
- 319 (operated by Thameslink)
- 357 (operated by c2c)
- 455 (operated by South West Trains)
- 465 (operated by South Eastern)
- 466 (operated by South Eastern)

None of these are of the older, slam-door type as they are due to be taken out of use by 2005.

Thameslink train class 319

South West Trains class 455 with lower metro-style seats

Wagn train class 313 with higher seats

c2c train class 357

2.4 Station audits

IDU audited 17 stations to record the current sign locations, positioning and design in order to identify any potential problems passengers may face in seeing and reading station name signs.

The stations that were chosen for the audit were selected in part on the basis of the categorisation of stations by size that was used by the former Network SouthEast sector of British Rail. This was done in order to ensure that a variety of station types were audited.

In doing this audit, we have been able to identify factors that affect sign positioning and design within different stations. We concentrated on stations that trains pass through, rather than those at which they terminate.

We took photographs of the station name signs from the trains in order to determine their visibility to passengers who are seated or standing at various positions on the trains.

We measured the sign dimensions, sign height, text height, colour contrast, distance from the edge of the platform, and the length of the platform to assess the sign frequency along it. The auditors also looked at some stations after dark in order to see how well they were illuminated.

The stations audited were:

- Brentford (South West Trains)
- Putney (South West Trains)
- Vauxhall (South West Trains)
- Clapham Junction (South West Trains)
- Bromley South (South Eastern)
- Penge East (South Eastern)
- West Dulwich (South Eastern)
- Finsbury Park (Wagn)
- Gordon Hill (Wagn)
- Seven Sisters (Wagn)
- Dalston Kingsland (Silverlink)
- Stratford (Silverlink platforms)
- West Ham (c2c platforms)
- South Ruislip (Chiltern platforms)
- Wembley Stadium (Chiltern)
- Mill Hill Broadway (Thameslink)
- Hendon (Thameslink)

Bromley South (South Eastern) – medium, four platform station

Vauxhall (South West Trains) – large, eight platform station

Dalston Kingsland (Silverlink) – small, two platform station

2.5 Passenger review

The passengers using trains in London are not a homogeneous group. Different types of passenger require different amounts of information, but all passengers need to know when they have arrived at their destination — either by being able to see and read a station name sign on the platform through the window, or by being able to see and read an on-board information display, or by hearing an audio announcement.

The train operators that were consulted know that many of their passengers are regular travellers, such as commuters. But there are a significant number of infrequent train users and people with impaired vision who have a particular need for clear station name signs as well as other information.

Frequent train users

Passengers who frequently travel on a specific route will be familiar with it and will recognise landmarks, architecture and station features seen through the window (and even the distinctive sounds of features such as bridges and level crossings) as they approach their destination. However, they will only be certain which station they are at if they can see through the window without obstructions and can identify the landmarks they know, even after dark. Often commuters are reading, talking or dozing and may miss their stop if a clear, well-lit station name sign is not visible when the train is drawing into a station and when it has come to a halt.

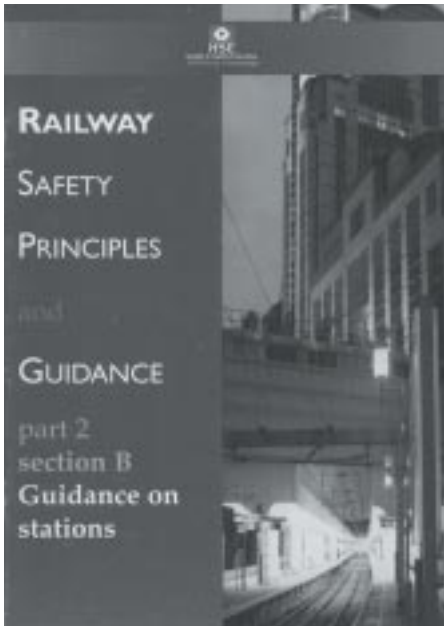
Infrequent train users

Passengers who will be unfamiliar with landmarks and station features and are completely reliant on the station name signs and audio announcements include those who are visiting a new location for a meeting or shopping, and tourists looking for attractions.

Infrequent train users will be paying more attention to the signs than frequent users, and are likely to notice large well-lit signs at the ends of the platform before the train comes to a halt. It is important for these passengers to have a good view of the platform signs, but if the train is crowded or they are seated where their view is obstructed, they will have problems knowing when they have arrived at their destination if there are no on-board displays or audio information. Such passengers often wish to identify intermediate stations that the train passes through (without necessarily stopping) in the course of a journey.

3 Document review

3.1 Railway Safety Principles and Guidance – Part 2, Section B, Guidance on stations (Health & Safety Executive)



The only specific mention of station name signs is a generalised statement:

Section 34b — *The station name should be conspicuously shown at intervals along all platforms and the name boards should be lit when the station is open during the hours of darkness.*

Other guidance that affects station name sign positioning:

Section 23c — *The location of station buildings and platform canopies should take account of the need for the sighting of signals* (signs that are located on platform canopies could affect this).

Section 24f — *All columns and obstructions should be at least 2000mm clear of the platform edge.*

Section 24g — *Platforms should have clear headroom of at least 2500mm to structures and platform signs for a width of at least 2000mm from the platform edge over the whole length. This dimension may need to be increased where the floor level of any train is high relative to the platform. At distances greater than 2000mm from the platform edge, the clear headroom to suspended equipment and signs may be reduced to 2300mm.*

Section 30h — *The headroom in all passenger areas of the station should be not less than 2500mm. Equipment or signs should not reduce headroom below 2300mm.*

Section 1.1 & 2 — *[This document] is intended to give guidance and advice ... This document is not intended to set out mandatory standards.*

3.2 Railway Group Standards (Rail Safety & Standards Board)

Railway Group Standards are only concerned with safety, not passenger convenience, but in standard GC/RT 5161 on Station Design and Maintenance Requirements, section 15 deals with Platform signs and colour contrast markings :

15.2 — *Passenger information signs. At all stations passenger information signs shall be provided to clearly indicate station name and, where appropriate, the unique platform identity. Sufficient illumination shall be provided for these signs to be visible in the hours of darkness or low light conditions when the station is open to station users.*

15.3 — *The provision of colour contrasting markings shall be considered on posts that support signs* (for example, station name signs).

3.3 The Sign Design Guide (JMU/SDS)

This guide was published by the Joint Mobility Unit (which is closely linked to the Royal National Institute for the Blind) and the Sign Design Society. It outlines the requirements of the Disability Discrimination Act and its implications for sign design, but it is quite vague in its recommendations, and none specifically relate to external locational signs.

2.2 Letterform selection — *... typefaces for signs should be legible. The choice of letterform will depend on the building or site and its historic context.*

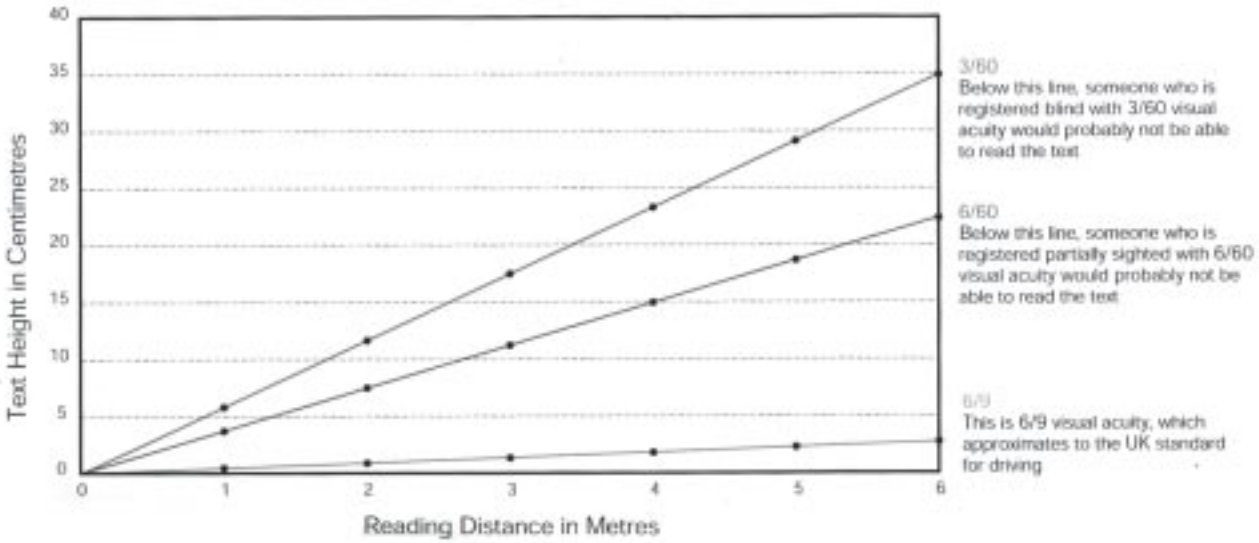
2.3 Sizes for letters — *The minimum size for text ... depends upon the location of the sign and reading distance. To assist users with visual impairments, the characters should be larger than*

has until now been the convention, but it should be acknowledged that some people would not be able to distinguish the message however large the characters. Long-distance reading ... a minimum of 100mm is recommended. Medium-range reading ... a character size of 50-100mm is recommended.

2.4 Reading distances and letter size — A graph shows the text heights required for people with a variety of different visual impairments. It shows an incredible range. At 6m reading distance, the text would need to be 350mm high for it to be readable by a registered blind person and 220mm to be readable by a partially sighted person. But text is readable when only 25mm high by people who have 20/20 vision.

2.6 Colour and contrast — *The contrast between letters ... and their backgrounds is as important as size. Black and white provide the most obvious contrast but can cause halation [i.e. the apparent spreading of light from the edges of the sign] ... due to the extreme contrast and glare. JMU advises that white lettering on a dark signboard (not necessarily black) gives good legibility if accompanied by a matt surface. It is important to check the background against which the sign is to be seen. For example, black letters on a white sign would not be helpful if positioned on a white wall.* Guidance is given for different wall types, e.g. brick (white sign) and white washed (dark sign), but at stations the name signs appear against a variety of backgrounds. It is not appropriate to have both a white and a dark version of a sign depending on the colour of what lies behind it, as this destroys the essential element of consistency and therefore easy recognition. Background panels can be helpful as a means of overcoming this problem and drawing attention to the presence of a sign, e.g. the white squares on which the red-and-blue Underground roundel is often placed.

3.1 Illumination and glare — *To minimise glare use a matt finish ... If the existing lighting system is inadequate, localised lighting of signs may be necessary.*



Recommended text height depending on visual acuity, from the Sign Design Guide

3.4 Signs Manual (London Underground)

This guidance is for all stations operated by the Underground, including those (the majority, in fact) which are on the surface. Its comments on sign consistency are equally valid at any type of station.

5.3.1 — *It will not often be possible to space [station identity signs] evenly along the length of a given platform. However, the minimum and maximum distance between [them] should be adhered to, to ensure that sufficient identification of the station name is given without overcrowding the platform or trackside walls.*

Required minimum distance between signs = 5 metres; required maximum distance between signs = 15 metres.

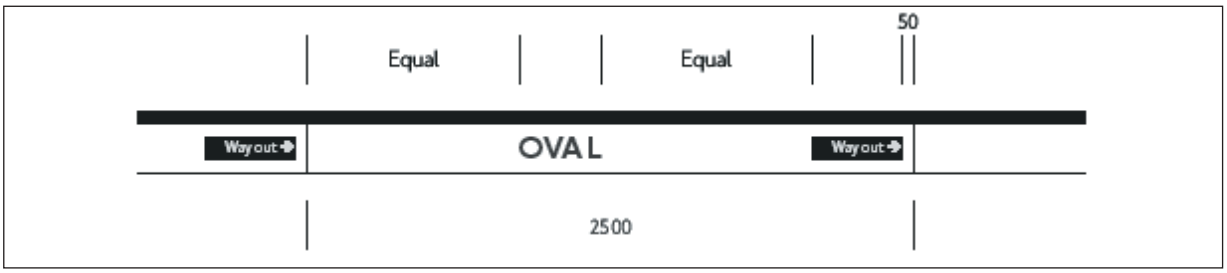
Due to the varying height of tube and surface stock [i.e. different sizes of train], maximum and minimum heights are given for trackside [signs]. In practice, [the] height should be based on the rolling stock using the platform, the bottom of the sign aligning to the bottom of the train window.

5.5 — Double-sided signs are used for open platforms.

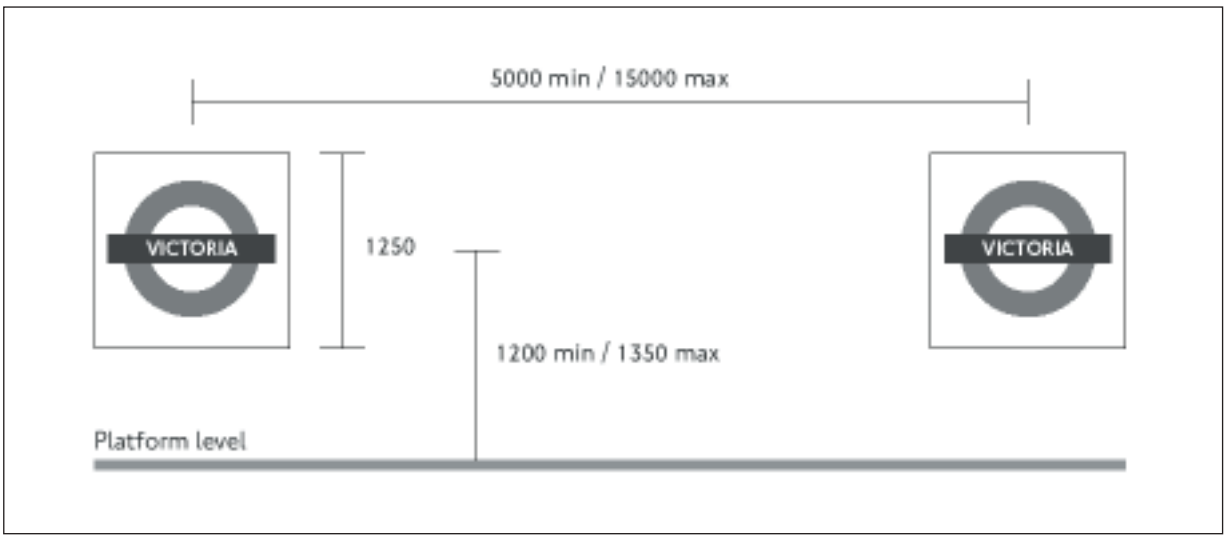
5.8 — *The frieze is an important back-up system of station identification.* (In fact, many users may regard it as the primary system at sub-surface stations, where it typically runs the entire length of the platforms.)

5.9 — *Having alighted from the train, customers should be given immediate directions to any interchanges directly served by the station. The siting of interchange information above the [station identity sign] capitalises on the visual focus of the station name, and if applied in a consistent manner, will ensure that customers know where to look for that information.*

5.9.1 — *On open platforms ... the interchange information should be integrated into the [station identity sign] ... The same principle may be adopted when applying 'Way out' information.*



LUL placement guide for friezes



LUL guide for frequency of platform signs

3.5 Train and Station Services for Disabled People (Strategic Rail Authority code of practice): findings on signing for the disabled

B4.2 — *It is recommended that signs giving the same type of information have the same shape, colouring, positioning and format.*

Consistency is essential – the sign for a particular facility or feature should continue to appear until it is reached.

It is recommended general research is instigated ... to develop consistent signage across the network that meets the needs of people with learning disabilities.

The visibility of a sign is affected by its position, size and distance from the person reading it. This must take into account the direction from which people are likely to approach the sign and where they might stand to read it.

Technical note: The average eye line of a standing person is in the range of 1400-1700mm above ground level. Signs ... that are intended to be read at close range should be mounted as close as possible to this range.

Signs that are designed around the needs of people with low vision and people who have learning difficulties are more likely to be clear, visible and unambiguous and will therefore meet the needs of a broad range of customers.

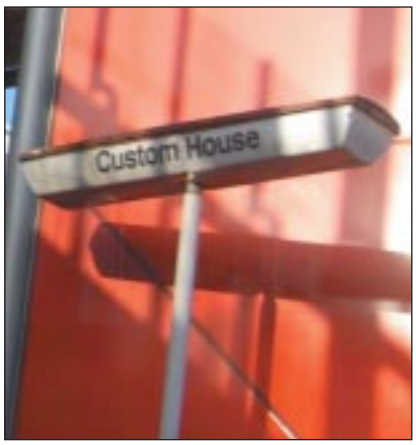
The greater the distance between the sign and its reader, the larger the lettering must be. The aim is to use the largest practical size compatible with the space available.

Lettering on the signs must stand out clearly from the background.

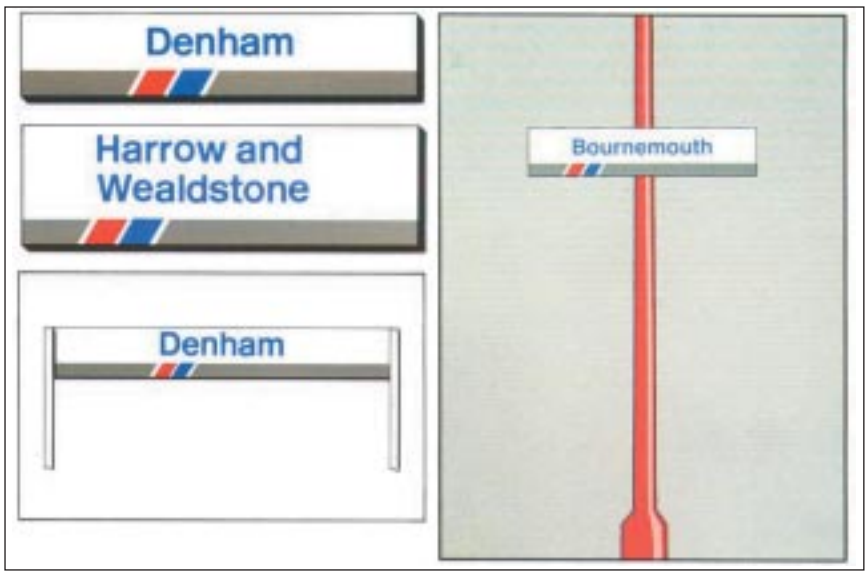
Clear announcements … are particularly valuable for blind and partially sighted passengers, and a reassurance to all. Where facilities currently exist or are being proposed that convey visual information, then audible information given must be displayed visually as well.

3.6 Design Guide (Network SouthEast)

This guide is not dated, but it was developed when Network SouthEast became a single railway system for local routes in and around London in 1986. It descended from a set of corporate design standards introduced in the early 1960s when the brand name and logo of British Rail were originally adopted. In order to make the four regions coming together feel like one railway, certain common design guidelines were to be applied to uniforms, trains, advertising and stations, including station



Light with station name included



Original Network SouthEast sign designs

signage.

The design guide reflects the business strategy of a reliable, accessible and efficient transport system — through design. It was meant to provide the knowledge, tools and aspirations for staff working within the Network SouthEast corporate framework.

The creators of the design guide found it sometimes necessary to compare large, medium and small stations. To this end, the guide categorised the stations on the basis of factors such as size and revenue. IDU s auditors considered this when choosing stations in order to reflect a variety of station types, and referred to this categorisation when auditing different sizes of station.

The auditors looked at no Category A stations, as they are all termini or major stations.

Examples of stations in the other categories are as follows:

- Category B — Clapham Junction
- Category C — Finsbury Park
- Category D — Penge East
- Category E — Gordon Hill.

In the stations section of the Design Guide, there are detailed drawings of the sign types that are appropriate for the different categories of stations, but no sizes and no guidelines on frequency of signing. The same frequency of sign is still being used today, as in many places the sign manufacturers responsible for creating new signs have simply replaced the old ones, and not added any additional signing. There are exceptions to this, however, where signs attached to lampposts have given way to the freestanding variety.

3.7 Modern Facilities at Stations (SRA) and 3.8 Standards for London Metro Stations (TfL)

The Strategic Rail Authority (SRA) has published a specification for Modern Facilities at Stations , which represents the minimum standards to which it aspires for all National Rail stations to be raised in due course. Similarly, Transport for London (TfL) has produced its Standards for London Metro Stations (National Rail) . Both documents make reference to signage, but neither makes specific mention of name signs. This appears to be because both are written primarily with the needs of originating passengers in mind, and see stations primarily as points of departure on rail journeys, paying little or no regard to the needs of arriving passengers — even in relation to, for example, their need for information about onward travel opportunities by other modes.

3.9 Train operator design guidelines

Most train operators consulted did not have prescriptive design guidelines, but rather a short brand guide, including colours and typefaces, for all printed materials. For example, the Wagn guide was very specific about how the brand guidelines were to be used for literature and advertising, but included nothing on sign specifications.

The one fairly prescriptive sign design guide the auditors received was from Thameslink. But the auditors did not see the guidance being followed at any of the Thameslink stations that were audited. Luton Airport Parkway was the only station they passed through that was using the corporate font for its station name signs. Thameslink s guide refers to the SRA s document Train and Station Services for Disabled Passengers , and gives consideration to making the operator s brand clear and the signs legible. It has visuals showing each type of sign, and the sign dimensions look similar to the Network SouthEast guidance. But there are no actual sign sizes marked, no optimum type size

4 Findings

given, and no guidance on sign heights, sign frequency or platform placement.

4.1 Sign issues

4.1.1 Sign sizes

The station name signs on platforms across the south-east rail network vary in size, but there is a consistency that reflects the sizes used for Network SouthEast signs. This is partly due to the fact that in many places, rather than totally new signs being manufactured, new vinyl graphics were applied to the existing sign products that were installed by Network SouthEast.

The majority of the station name signs are 2100mm wide, 300mm high and 2100mm from the ground to the bottom of the sign.

Larger run-in signs are sometimes located at the ends of platforms and are seen first as the train pulls into the station. They range from 2600mm to 4500mm wide, from 600mm to 1450mm high and 955mm to 2320mm from the ground to the bottom of the sign. They are usually located away from where most passengers are likely to be standing, and are larger and lower than the other signs on the platform, so they can be seen both from standing and sitting positions on the train. This makes this type of sign very useful.

Smaller signs are located at some of the less frequently used stations, such as Gordon Hill, where the signs are 750mm wide by 500mm high. The x-height on these signs is also smaller at only 90mm. But there is no obvious reason for using smaller signs and type sizes as the platform widths, and therefore the passenger s viewing distance, are no different from those at any of the other similar stations. People on board have the same need to be able to identify the station irrespective of its size and importance. The most likely reason for providing smaller signs is that because the signs are fixed to a single lamppost rather than two posts, they need to be narrower to avoid instability and movement. Narrower signs with text on two lines are acceptable where necessary, as long as the type size is large enough.

If an unobstructed view is available, most of the signs at the stations are large enough to be seen from the train, but often they are not visible (see section 4.1.3).

Sign size is 3000mm x 600mm
1780mm from ground to bottom of sign

Sign size is 750mm x 500mm
2100mm from ground to bottom of sign

Sign size is 3000mm x 610mm
1800mm from ground to bottom of sign

Sign size is 2100mm x 300mm
2400mm from ground to bottom of sign

4.1.2 Sign colour contrast

The colours used for the station name signs all reflect the SRA s guideline on colour contrast.

- Wagn is introducing dark blue signs (PMS 2757) with a purple accent colour (PMS 2395) and white text. c2c signs are the same but with a pink accent colour.
- Thameslink has white signs with dark blue text (PMS 295) and a yellow accent colour (PMS 123).
- Silverlink has white signs with blue text and blue and green accent colours.
- Chiltern Railways still has many white signs with blue text and red, grey and blue accents (i.e. as inherited from Network SouthEast, though some stations have been re-signed in Chiltern s own red, white and blue livery).
- South Eastern (formerly Connex) has white signs with blue text and a yellow accent colour.
- South West Trains has white signs with black or blue text and red and yellow accent colours.

The colour combinations used by the train operators are of sufficient colour-contrast for sign legibility, but the audit found that where there were inadequate lighting levels all the signs were difficult to see and read after dark (see section 4.2.3).

There were very few signs that were internally illuminated on the stations audited. Some stations outside London, such as Milton Keynes, have this type of sign, and the auditors have found them far easier to read at night. But obviously there is a cost implication in providing and maintaining them.

Most of the station name signs are white signs with black or dark blue text. The Sign Design Guide (see section 3.3) advises that this colour combination may create halation (a halo effect) because of the extreme contrast and glare. But the auditors found that the white signs are easier to see than darker signs when they are located against a dark building, in shadows under a canopy, or against dark vegetation.

The dark blue signs of Wagn and c2c have less glare during the day, and are prominent against a pale sky or white canopy. But they are less easy to see against a dark building, in shadows under a canopy, or against dark vegetation, especially when they are not sufficiently lit. It is particularly important for the darker coloured signs to be adequately illuminated to maintain visibility and legibility after dark.

Background	Sign Board	Legend
Red brick or dark stone	White	Black, dark green or dark blue
Light brick or light stone	Black / dark	White or yellow
Whitewashed walls	Black / dark	White or yellow
Green vegetation	White	Black, dark green or dark blue
Back-lit sign	Black	White or yellow

SRA guidelines for colour contrast and visibility (see section 3.5)

Wagn – dark blue signs with white text

Thameslink – white signs with blue text and yellow posts

Silverlink – white signs with blue text

South West Trains – white signs with black text

South Eastern – white signs with blue text

Chiltern – white signs with blue text

Reflective materials may be useful if there is sufficient direct light. Another option which could be considered for text would be photoluminescent materials, which would charge during the day and glow at night. Further research and testing is required, but consideration should be given to whether reflective text or signs would help passengers see or read the signs after dark.

4.1.3 Sign typefaces

All the signs use bold weight sans serif typefaces (i.e. without serifs , or tails, on the letters, like the typefaces used in this document). The typefaces used vary, but all are appropriate for use on signs and are legible from a distance.

- Wagn and c2c use the bold version of Interstate.
- Thameslink uses the bold version of Ocean Sans MT in some of its stations.
- The majority of signs used by Thameslink, South West Trains, South Eastern, Chiltern Railways and Silverlink use the Rail Alphabet that was introduced by British Rail and later used on the Network SouthEast signs, or a typeface that is very similar (such as Helvetica).

All station names are written with an uppercase first letter and lowercase for the rest of the word. Using this format, rather than all uppercase, is recommended in most sign design guidance, including the Sign Design Guide, as the greater variety in the size and shapes of lowercase (i.e. non-capital) letters, including some with descenders (like g and y), makes them easier to recognise at a glance.

4.1.4 Sign letter heights and viewing distances

The type size or letter heights are measured by cap height (height of the capital letter) or x-height (height of the lower case letter x). Appropriate letter heights are determined by the maximum viewing distance (the distance the sign will be viewed from).

The letter height used for the station names ranges from 90mm to 125mm x-height. The most common x-height was around 110mm.

The letter height used for the station name on the larger run-in signs at the ends of the platforms varied from 130mm x-height to 260mm x-height with the majority closer to 130mm.

Guidance on letter heights

London Underground s Signs Manual has a viewing distance chart that specifies the minimum letter heights for different viewing distances. The sizes are much smaller than other sources of type size guidance, but they are minimum sizes and in many cases a much larger type size is actually used, particularly for key information such as the station name. The guidance suggests that a sign approximately:

- 6-8 metres away requires a minimum x-height of between 15 and 20mm
- 25 metres away requires a minimum x-height of 60mm
- 30 metres away requires a minimum x-height of 80mm.

New Johnson Medium used by London Underground

Rail Alphabet produced for Network SouthEast, used by South West Trains, South Eastern, Chiltern Railways and Silverlink

Ocean Sans MT used by Thameslink

Interstate used by Wagn and c2c

Helvetica, similar to Rail Alphabet

The Sign Design Guide suggests:

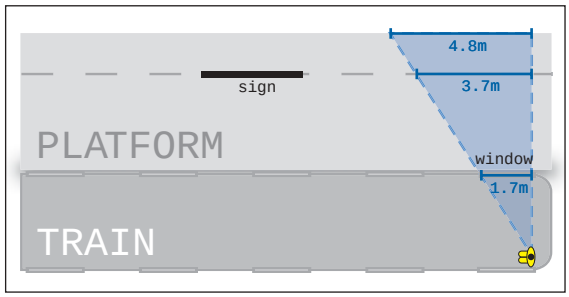
- for long-distance reading ... a minimum of 100mm
- for medium-range reading ... a character size of 50-100mm
- a 6 metre reading distance requires a minimum x-height of 25mm high for people who have 20/20 vision, but 350mm for registered blind people and 220mm for partially sighted people.

The Strategic Rail Authority s guidance on signing for the disabled says the aim is to use the largest practical size compatible with the space available. The table below shows its suggested type sizes and viewing distances.

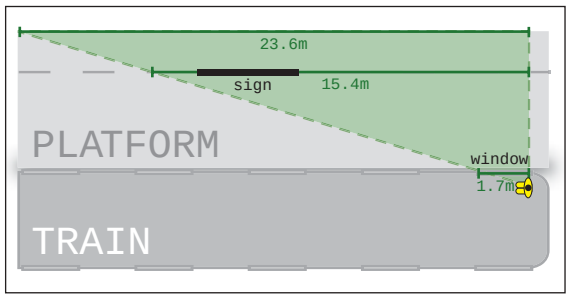
Viewing distances

A passenger s viewing distance to the name signs varies depending on where in the carriage they are sitting and the size of the window they are looking through (see diagram below).

The viewing distance to read a sign for a passenger sitting on the platform side of the train with a sign directly outside the window is much less than for a passenger on the far side of the train who has to look along the platform to see the sign. A passenger sitting on the far side of the train will be up to an additional 3 metres further away from a sign located directly outside the window (the width of the train) and much further from signs along the platform. So the sign needs to be readable from the furthest possible viewing distance, which will be at least 7 metres, but probably much more.



Field of vision for passenger on far side of train



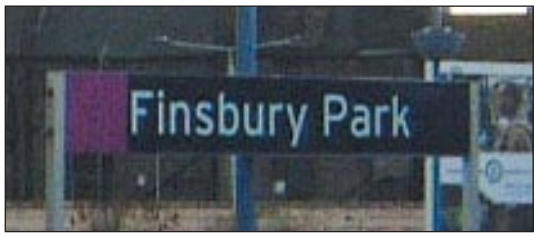
Field of vision for passenger on near side of train

Reading distance (mm)	5000	4000	3000	2000	1000
Best letter height (mm)	200	160	120	80	40
Acceptable letter height (mm)	170	130	100	70	40

From the SRA guide (see section 3.5): 'Signs that are designed around the needs of people with low vision ... are more likely to be clear, visible and unambiguous, and will therefore meet the needs of a broad range of customers'. These are their guidelines for letter height on signs.

Staggering the signs works here – there's a clear view of more than one sign

Staggering the signs fails here – a train is blocking the only visible signs



These signs are both on the Wagn line – the letter height of the Finsbury Park sign is of an acceptable height, but the Seven Sisters sign has insufficient letter height for SRA visibility guidelines

An additional important type size consideration, however, is that most of the stations have staggered name signs. When passengers cannot see a sign through the platform side window, they are expected to look across the tracks to a sign on the opposite platform. This increases the viewing distance. In some cases, the auditors found that the only sign that was visible from the train was across two platforms and two sets of tracks. They also found that another train on an adjacent platform often obscured the closest sign (see section 4.3.1).

Inconsistent type sizes

Finsbury Park s name signs are the same size as those at other stations on the line (2100mm x 300mm), but the x-height of 125mm (compared with 95mm at Seven Sisters) is considerably larger and easier to read. At Finsbury Park there is a large distance from the edge of the platform to the signs (4000mm), which may be the reason for the larger x-height, or it may be the unintended consequence of the absence of a clear, detailed sign strategy which specifies the type sizes for each sign type for manufacturers to follow.

4.1.5 Frequency of signs

The number of station name signs on the platform and the number of windows determines whether a passenger can see the nearest sign. The auditors found they often could not easily see a station name sign through any window when the train had stopped.

The space between signs needs to be considerably less than the length of the shortest train carriage for passengers to be sure of being able to see a sign. The audited trains had carriages that measured from 20 metres to 23 metres, and had from two to eight carriages. However, in 14 of the 17 stations, the signs are between 20 metres and 30 metres apart. At two of the other three stations the signs were between 15 metres and 20 metres apart, and one had a distance between signs of over 30 metres.

At Dalston Kingsland, one of the platforms has only two signs, an average of one sign every 34 metres. On the Silverlink platforms at Stratford half of each platform, the area under the canopy, has no signs. The canopy is perhaps supposed to be its own sign as it is easily identifiable, but passengers coming to this station for the first time would not know this. At West Ham, two platforms lie side by side. One is for London Underground s District Line trains, and the other is for c2c s trains. The Underground signs are more frequent and more evenly spaced. It would be easy to see an Underground-style sign out of the window from any location, but this is not the case with those erected by c2c.

Vauxhall (South West Trains) – looking across many platforms, not many legible signs

Putney (South West Trains) – red ovals highlighting the frequency of signs (on alternating lampposts)

Stratford (Silverlink) – only three signs on entire platform, with no signs under the canopy

Hemel Hempstead – this frieze is not being used to its full advantage

West Ham – showing infrequent signs on the c2c platform

West Ham – in comparison, much better sign frequency on the Underground platform

Guidance on sign frequency

None of the sign design or rail guidance documents reviewed makes reference to how many signs there should be on a platform, except London Underground s Signs Manual. It specifies that there should be not less than 5 metres and not more than 15 metres between name signs at Underground stations. Further research may be needed to determine whether this standard is equally applicable to stations served by main line trains — but certainly some minimum frequency should be stipulated. At stations below ground, with continuous platform walls, there is also a frieze that runs the length of the platform with the name repeated along it, making station identification even easier. Frieze signs would not have been possible at some of the stations audited, but the frequency of station name signs was found to be insufficient, and frieze signs would be practicable where there are buildings, walls or fences (though oddly, signs are seldom fixed to these).

Many operators said they had staggered the signs with those on opposite platforms, thereby increasing the possibility of a passenger seeing a sign. But the signs on opposite platforms are viewed from further away, and so may require a larger typeface. More importantly, there is often another train at the opposite platform blocking the view of the signs, so sign staggering shouldn t be taken into consideration when assessing sign frequency.

All stations need to have enough name signs for passengers to be able to see at least one sign when their train is in the station, or as it slows down for the station, irrespective of how heavily the station is used. At shorter platforms in particular, consideration should be given to locating large run-in signs on the approach to the station, alongside the tracks.

When determining the sign frequency, it should be remembered that station name signs are for the benefit of passengers on the train — not those on the platform — so the level of use of the station is irrelevant.

‘Car stop’ signs

All the platforms have a sign that marks where the driver should stop the front of the train, depending on the number of carriages. This makes the positioning of the signs and planning the sign frequency much easier.

We suggest that there should be a station name no further than 5 metres along the platform from these points, and then a sign every 10-15 metres along the platform. At present, it is common for them to be placed on (or between) alternate lampposts, but the spacing of these does not bear any obvious relationship to signing principles.

4.1.6 Illumination of signs

It is important that passengers can see and read station name signs after dark. This relies on direct lighting that illuminates the signs, or internal illumination. Poor illumination is a platform issue (covered in more detail in Section 4.2.2), but poor lighting dramatically reduces the effectiveness of signs.

Internally illuminated signs

Only one internally illuminated sign was found at the stations audited, and this was a very large run-in sign. Some stations outside London (such as Milton Keynes and Grantham) have all the station name signs internally illuminated and they are very visible. There are major cost and maintenance

Wembley Stadium (Chiltern) – if a light goes out, signs are impossible to see

Finsbury Park (Wagn) – the dark signs are slightly more difficult to see at night than lighter signs

Highbury & Islington (Silverlink) – sign blends into ad billboard in background

implications for internally illuminated signs, which may be the reason why few signs are illuminated in this way, but it does make a dramatic difference in their visibility.

Externally illuminated signs

Post-mounted station name signs are often located in front of a lamppost, or attached to the lamppost. Oddly, on island platforms, they sometimes face in only one direction, so that passengers in trains on the opposite track only see the back of a sign. Lamppost mounting should make the signs well lit, but the auditors found that the light is directed straight downwards, or along the platforms, not directly illuminating the sign (occasionally, other objects such as hanging baskets have been placed between lights and signs, creating an unnecessary shadow). In many cases there is no light near the sign, and the sign is very difficult to see or read after dark. The auditors found no station name signs that had lights specifically placed to illuminate them.

Signs suspended from canopies do not appear to have been planned or located in conjunction with the canopy lighting, so there is considerable variation as to whether there is a light illuminating the sign. Wall-mounted signs, attached to buildings, are often not directly illuminated by any light source. Wall-mounted signs are also sometimes under canopies or overpasses, and therefore in shadow. This makes them difficult to read even during the day.

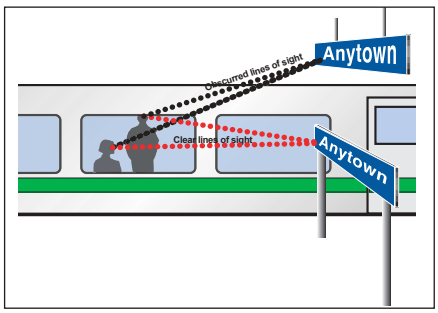
The white signs with dark writing were easier to read after dark. Some platforms have only two or three signs in their entire length, and they are difficult to spot in the dark. Wagn s white on dark blue signs at Finsbury Park are legible, but use a much bigger letter size than do other signs on the Wagn route.

4.1.7 Sign positioning and height

The height and position of the station name signs affect whether passengers can read the signs from the train. If they are too low people standing on the platform will obscure them. If they are too high passengers that are standing on the train will not be able to see the signs, and if there is a frame across the upper part of the window, to support a section that can be opened, this will obscure them for some seated passengers.

The height from the ground of the majority of post-mounted and wall-mounted signs at the stations that were audited was 2100mm. The suspended signs were higher, at around 2400mm. The run-in signs tended to be lower, at around 1400-1800mm, though some were as high as 2320mm.

Often the run-in signs, positioned at a lower height, are much easier to see and read by seated passengers, and are also visible to those standing. The run-in signs can be lower than those further along the platform at stations where few passengers wait at the platform end, so they are less likely to be obscured. Lower signs are difficult to see when a passenger is viewing them from across the train between other passengers who are standing, and especially from trains with higher seat backs.



Signs positioned perpendicular to the platform edge will be visible from the angle of approach

Finsbury Park (Wagn) –
4500mm x 1280mm
1000mm from ground to bottom of sign

Bromley South (South Eastern) –
2100mm x 300mm
2100mm from ground to bottom of sign

Mill Hill Broadway (Thameslink) –
2100mm x 300mm
1800mm from ground to bottom of sign

The higher suspended signs can be difficult to see if the mid-window bar obscures them. This is less of an issue on the newer trains which have undivided window panes. Because they are climate controlled internally, they don t need an upper part that opens. However, some windows on these newer trains have an openable part to provide emergency ventilation, and therefore retain the obstructive bar.

Passengers who are standing are not able to see the suspended name signs without stooping, which can be difficult when the train is congested.

The legibility of signs from a moving train (particularly one running at full speed) can be enhanced if they are placed perpendicular to the direction of travel, rather than parallel with it, so that they remain within the passenger s field of vision longer. Alternatively, two signs can be arranged in a v-pattern, angled to the alignment of the track (an arrangement trialled at Grantham some years ago, but then mysteriously abandoned). On the mainland of Europe, and in North America, it is usual to place name signs on the ends of station buildings as well as on their sides, but in Britain this practice seems to be limited to signal boxes, whose identity is of limited interest to passengers. Where motorways run parallel to railways, e.g. at Mill Hill Broadway on the Thameslink route, it is very noticeable that it is the road signs — which face the direction of travel — which are actually much more legible to passengers on passing trains than the signs on the platforms that are intended for their benefit.

4.1.8 Sign products and text application

All the station name signs are fabricated aluminium panels. The text and accent colours have been either screen-printed or are applied vinyl.

The signs are either post-mounted (on lampposts or two freestanding posts), wall-mounted or suspended from a canopy. Some are double-sided, but most are single-sided signs. Station lampposts are sometimes hinged at the base to facilitate maintenance, but signs fixed to such posts may be vulnerable to damage when they are lowered.

Fading, peeling and vandalism

Some of the signs that have been screen-printed have faded, and some of the vinyl on the signs is peeling away. Signs on platforms will inevitably get vandalised, with graffiti and/or distortion, and are sometimes stolen outright. It is not easy to determine whether anti-graffiti coatings have been applied to the signs. In some cases, the station name was completely obscured by paint or dirt, or had been eroded as a result of graffiti-removal efforts.

Gordon Hill (Wagn) – faded sign screen-printed in old Network Southeast colours

4.2 Station platform issues

Station name signs are located on platforms, so it is important to consider the platform issues that affect their visibility or legibility.


Sydenham Hill (South Eastern) – faded, graffitied screen-printed sign

Finsbury Park (Wagn) – new applied vinyl that has already been damaged

Bromley South (South Eastern) – faded run-in sign not in older sign style

4.2.1 Platform measurements

The width of the platform usually determines how far from the train the station name signs are located, and therefore influences the viewing distance. Often passengers have to look across the tracks to the signs on the opposite platform, so the number of tracks becomes important for determining the viewing distance. The length of the platform determines how many signs are required, and often affects the sign frequency.

Platform length

Ten of the platforms audited were between 160 metres and 180 metres in length. Some were much shorter, with Dalston Kingsland s platform only 68 metres long, and some were much longer, with West Ham s platform measuring 249 metres. The platform length affects the number of signs required, but should not affect their frequency.

There are significantly fewer signs on the shorter platforms. One platform at Dalston Kingsland has only two signs. But passengers to all stations, regardless of the platform size, need to be able to see a sign.

Platform and track width

The single platforms audited are between 2.5 metres and 4 metres wide, and the double platforms are between 5 metres and 7 metres wide.

Passengers sitting at the far side of the trains will be viewing the signs from at least 6 metres away, a viewing distance for which the SRA recommends a sign letter height of over 200mm. In practice, only the run-in signs had a letter height of this size.

The distance across the two tracks to the opposite platform varies, but can be estimated to be at least 6m because most of the trains are around 2.8 metres wide. Passengers may have to look across the train and across the tracks to the signs on the opposite platform, so the viewing distance could be more than 9 metres.

Multiple platforms

Some stations have multiple platforms such as Vauxhall (8 platforms) and Clapham Junction (16 platforms). It is necessary for some passengers to look across more than two tracks and platforms to see a station name sign. The viewing distance could be up to 20 metres. Signs are staggered on opposite platforms, but there are not enough signs because these stations are so busy that trains often obscure the signs on opposite platforms.

4.2.2 Obstructions on platforms

Most of the platforms audited have staircases, railings and buildings that obstruct the line of sight to the signs. Signs could be fixed to many of these obstructions but few are used for this purpose, possibly because they would require a non-standard fixing or different sign size.

West Ham (c2c) – 12 car platform. 11 signs spread over 242 metres

Gordon Hill (Wagn) – two platform station, unstaffed, sparse signage

Mill Hill Broadway (Thameslink) – four platform with sign staggering (see section 4.1.3)

Dalston Kingsland (Silverlink) – three car platform. Three signs spread over 68 metres

At some stations, the name signs were competing for visibility with advertisements. The signs are not sufficiently prominent, particularly after dark, when some advertisements are internally illuminated.

Freestanding information boards obscured some station name signs on opposite platforms.

Another feature that can affect the visibility and legibility of the station name signs is bridges across the platform, as at Dalston Kingsland. The signs have been located beneath the bridge, inevitably in shadow, making them difficult to read even in broad daylight.

4.2.3 Platform illumination

Platforms have to have a minimum lighting level, for safety reasons and to assist staff in charge of despatching trains. But some of the stations audited had poor illumination, and were very dark. Therefore the signs at these stations were very difficult to see and read.

None of the station name signs were specifically illuminated. The platform lights were generally designed to illuminate the entire length of the platform to assist passengers and train crews, but often failed to illuminate the signs immediately beneath (or aligned between) them. It would be helpful to set a standard for the lighting of these signs.

Few London stations now exhibit a 1950s design feature still found in a number of locations elsewhere on the railway, in which platform lights are housed in white glass boxes which carry the name of the station on them, so that it is silhouetted at night (making it particularly legible). This arrangement can be seen on Silverlink at Custom House and on the Wagn route at Kings Cross — ironically, a terminus at which all passengers must alight, and therefore arguably in less need of good identification signs than is the case at intermediate points where they are faced with a choice.

4.3 Train issues

4.3.1 Obstructions that obscure signs

Seat backs

The older style, metro-height seats are only around 950mm from the floor to the top of the seat back, and are an optimal height for unobstructed views through the train to the platform outside.

These seats are being phased out for safety reasons, and are being replaced on all new and renovated trains with a new standard of seat that is on average 1200mm from the floor to the top of the seat back. These taller seats can cause an obstacle for passengers attempting to view signs. Most windows measure about 800mm from the floor to the bottom of the window and 1500mm to the top. This means that for seated passengers a large part of the window can be obscured by the seat backs.

Sudbury Hill Harrow (Chiltern) – this platform is unwelcoming, with few lights and fewer signs

Clapham Junction (South West Trains) – ad/info board and structure blocking view of staggered signs

Dalston Kingsland (Silverlink) – this sign is under a bridge, difficult to read even during day

Adjacent train blocking closest visible station name sign

Window frame dividers

Many of the trains audited have a window frame dividing the window at a height of between 1270mm and 1400mm from the floor, which for some passengers is at the perfect height to obscure the view of suspended station name signs. Some of the newer trains are climate controlled and have fewer openable windows so there are fewer window frame dividers to obstruct the passengers view.

Platform signs are positioned above 2100mm to avoid passengers on the platform obscuring them, and to make vandalism more difficult. However, to be visible by all passengers through the train windows, these signs need to be positioned lower. At those stations where most passengers stand in the middle section of the platform, post-mounted or wall-mounted signs at the platform ends could be positioned lower to increase visibility as the train arrives at the platform. Waiting passengers would rarely obscure them, but train operators may argue that they will be prone to vandalism.

Standing passengers

People standing on the trains cause an obstruction. They will position themselves where there is something to hold on to, and at busy times they will be spread throughout the train, holding onto seat backs. These standing passengers will not be able to see the suspended station name signs without bending down, because the top of the window is at a height of 1500mm, but most of the signs are over 2100mm high.

Train interior elements

Most trains have interior elements that cause obstructions to reading the signs, such as toilet compartments and panels separating the carriages into sections. On some older types, now being phased out, luggage racks can block the seated passengers field of vision through the window to the signs.

Train measurements

The carriages on the audited trains were 20 metres to 23 metres long. Most of the carriages had six windows and four doors with windows on each side. With the most common window width of 1360mm and door window width of around 500mm, this provides 10 metres of window space along the carriage through which to see the station name signs.

4.3.2 Train windows: size, glare and graffiti

Windows on the trains need to be clear of obstructions, graffiti, reflections and glare for passengers to be able to see platform signs.

Most of the train windows are around 1350mm wide, except for the South West Trains class 455 and the Thameslink class 319, which are around 1750mm. They were all between 700-800mm high, and some had a divider separating the fixed window from the openable part. With a sufficient number of signs on the platforms, these window sizes should enable passengers to see and read one,

Standing and moving passengers block the platform signs

South West Trains carriage with metro seats and low seat backs (now being phased out)

Wagn train with higher seat backs (which restrict field of vision)

Wagn train with window separator obstructing signs

although on some trains the seats are not well aligned with the windows and passengers can find themselves seated alongside a length of wall, e.g. those covering the cavities into which the doors slide.

Where stickers are positioned on the windows or where they have been graffitied or scratched some passengers, in particular those with visual impairments, may find the signs more difficult to read.

Particularly at night, glare from the interior lights in the carriage can cause a problem with reflections. This is also the case in daytime if the train is under a darker canopy and the signs are not illuminated. To be readable through the reflections, the signs need to be much more brightly lit than is normally the case at present.

4.3.3 On-board station name information

LED displays

Many of the trains that were audited, including those operated by South West Trains, Chiltern, South Eastern, Wagn and c2c had LED (light-emitting diode) on-board information signs, but the use made of them was variable. Only those on South West Trains were all working and displaying the station names. Other train displays provide general line information, including calling points, but not individual station names in real time . Such moving message boards are helpful in alerting passengers to the approach of their station, but are no substitute for good platform signs to confirm its identity.

Audio announcements

Audio station name announcements are very helpful for many passengers. They are especially important for people with visual impairments, but are also crucial for passengers that cannot see a station name sign through the window, as well as being a useful reminder for commuters who are dozing or reading. Audio announcements are not a substitute for clear station name signs, as people with hearing impairments cannot hear them, but they enable passengers to feel more relaxed about knowing when they are approaching their destination. They need to be made as the train approaches the station, not just when it has arrived, to enable passengers with limited mobility or a pushchair and luggage to prepare to alight.

The auditors only heard audio announcements on platforms, similar to those on the London Underground, at interchange stations. At some stations, audio announcements from the platform can be heard when the train doors open, but such announcements do not necessarily include the name of the station in question.

South West Trains carriage with interior elements that cause obstructions

Interior lighting causes window glare – especially after dark

Clapham Junction – sign is difficult to read because of glare and shadow, and due to scratches on the window

Stickers and seat backs cause window obstruction

Window glare and reflections also cause problems during the day

Some of the train operators that were consulted commented that all of their trains have an audio system but that announcing stations is not the responsibility of the drivers as it could cause them to be distracted. To do this regularly would require an automated system that would be very expensive to fit retrospectively, but is likely to be integral in new trains.

The class 444 Desiro trains operated by South West Trains are one of the few types that has an automated announcement system. This uses a global positioning satellite link (GPS) to trigger when the announcement should be made. Other models of trains, such as the class 448 Juniper (now withdrawn) use axle rotation to trigger station announcements, but wheels slipping on leaves sometimes render the system inaccurate and announcements are made incorrectly, which can be worse than not making them at all. And any public address system is vulnerable to technical failures of the kind which are unlikely to affect fixed signs.

On-board staff

Some trains in the London area have conductors on board who are trained in making announcements, but are not normally required to do so at all stations (as they have other duties, such as ticket inspection, which mean that they are not always close to a microphone point). The frequency of stops on many lines makes station announcing impracticable.

On-board route maps

Some of the trains audited, including Thameslink, carry a system map. But these are in a very small text size and usually include more than one line, so they are of limited use in station identification. The simple line diagrams used on the Underground trains enable passengers to count off the stations as they approach their destination, but main line trains are not necessarily confined to a single route and do not necessarily call at all stations, so this device is of more limited utility.

South Eastern – LED on-board displays give general line information, not station names

4.4 Environmental issues

4.4.1 Weather and time of day

Environmental factors found to affect the visibility and legibility of the signs included glare from the sun, fog, snow, rain and water on the windows, but the most important is darkness which, during the winter, can be from 1600 until 0700. Even regular commuters find landmarks and other visual cues that they rely on difficult or impossible to see if they are not illuminated.

South West Trains `– The LED on-board displays give station names and other information

Thameslink Trains have useful line maps but the text is small and difficult to read from a seated position

Glare and scratches on the window affect sign visibility

Finsbury Park – at night, signs are not directly lit

5 Recommendations

These recommendations are based on the findings of this audit, and a review of the latest sign design guidance.

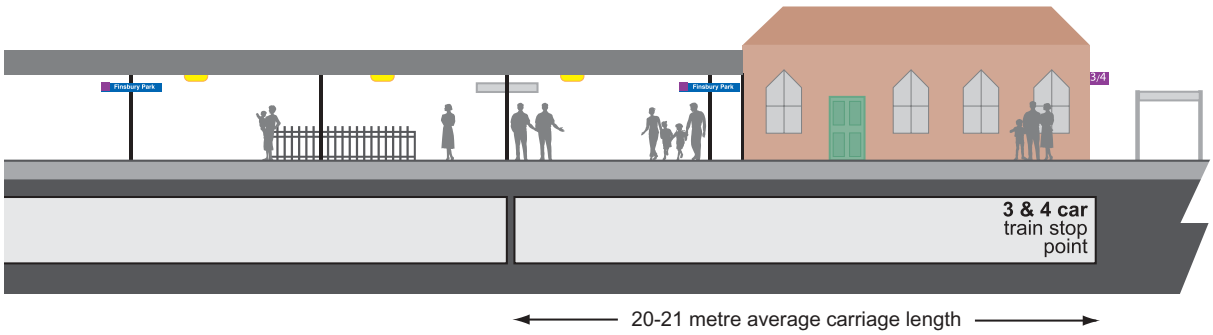
- There should be greater frequency of signs. No more than 10 metres between signs should be the goal, and no more than 5 metres from each car stop (i.e. the point at which the front of the train stops).
- Signs should be provided at a variety of heights. The primary height of the signs should be 2100 mm from the ground to the bottom of the sign. However, some signs can be placed at 1400 mm from the ground to the bottom of the sign at points where there are unlikely to be many waiting passengers to obscure them.
- One large (3000mm x 600mm or more) internally or directly illuminated run-in sign should be installed at the end of each platform, where practicable, so that whichever side of the train a passenger is looking out, they will be able to see one.
- The lighting on platforms should be enhanced or adjusted to ensure that station name signs are properly illuminated. An empirical standard for the lighting of signs should be established.
- Where there is opportunity for a frieze, as at Underground stations, one should be installed. This can be done on buildings, walls and fences.
- Type size should be increased to at least a 150mm x-height wherever a passenger is expected to look across multiple platforms in order to see a sign.
- Signs across tracks should never be counted when auditing sign frequency, as they cannot be relied upon to be visible 100% of the time.
- Text should be screen-printed wherever possible, as this method is more resistant to vandalism and cannot be picked off.
- Signs should be coated with a graffiti-resistant finish.
- Signs should have a matt finish to reduce glare.
- Research should be carried out into the effectiveness of reflective materials for station signing.
- Advertising should be kept away from station name signs. It should not block signage or be combined with it.
- If the station name is exceptionally long, the typeface on a sign should never be made smaller. Instead, the size of the sign should be increased.
- Where possible, name signs should also be erected on the ends of platform structures, and/or freestanding, at right angles to the alignment of the tracks.
- Station name signs are important. The current inconsistency in their quality and effectiveness is unsatisfactory, and does a disservice to passengers. Network Rail should draw up a suitable set of standards (London Underground s Signs Manual offers an excellent model), and announce a date by which the train companies which lease the stations from it are to implement them. If it is unwilling to do so, the Strategic Rail Authority should incorporate them in its specification for Modern Facilities at Stations , and set Network Rail a deadline by which this is to be met.

Recommendations: Category B station, centre of platform

Existing station name signs

POTENTIAL PROBLEMS

- Station name signs often suspended from canopy, downlighting does not sufficiently illuminate signs and signs are too high for many passengers to see and read from on-board trains
- Signs every 10 metres, but alternate signs have back of sign facing train – station name not visible
- Buildings, people, posters and railings obscure view of signs on nearest and opposite platforms.



Improving station name signs: size, frequency and positioning

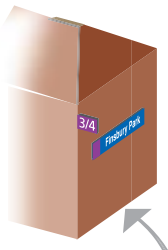
RECOMMENDATIONS: SIGNS

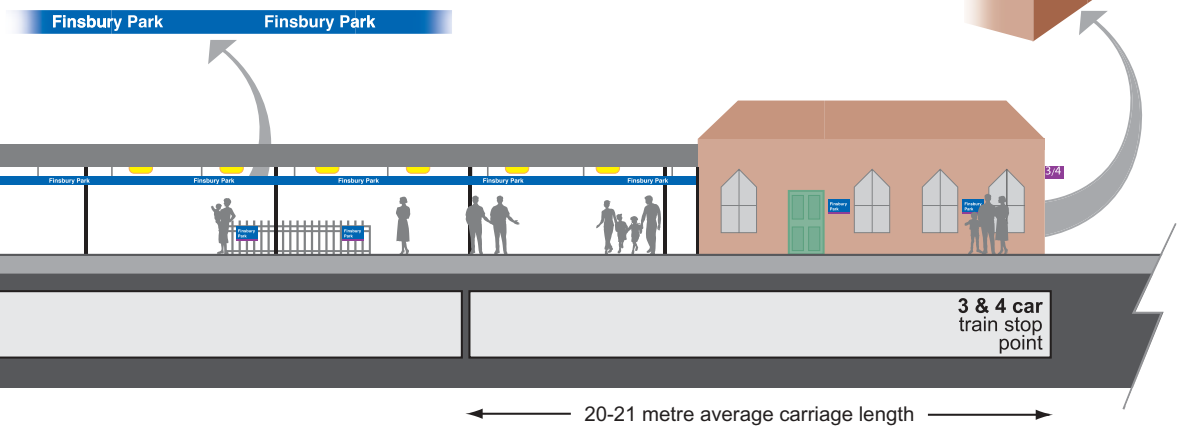
- Signs should be more frequent (around 5 metres apart) where there are more elements which potentially obscure the signs
- Improve illumination of signs suspended from canopies
- Lower level signs (around 1400mm from ground) should be installed – they are nearer to passengers' eye level. These may need to be narrower (eg. 750mm x 500mm) to fit available space on walls and railings, but should have 110mm x-height type

- A continuous 'frieze' sign should be considered on buildings or other appropriate surfaces – friezes can be very eye-catching, especially if they are well-lit and against a contrasting background.

RECOMMENDATION: SIGNS AT 90˚ TO PLATFORM EDGE

- Place some station name signs so that they are at right angles to platform, either attached to buildings or post-mounted. These are easier to read from trains passing through.





Key to elements

Different sign sizes. *Station name visible*

Back of sign *Station name NOT visible*

Train car stop signs

Canopy downlights

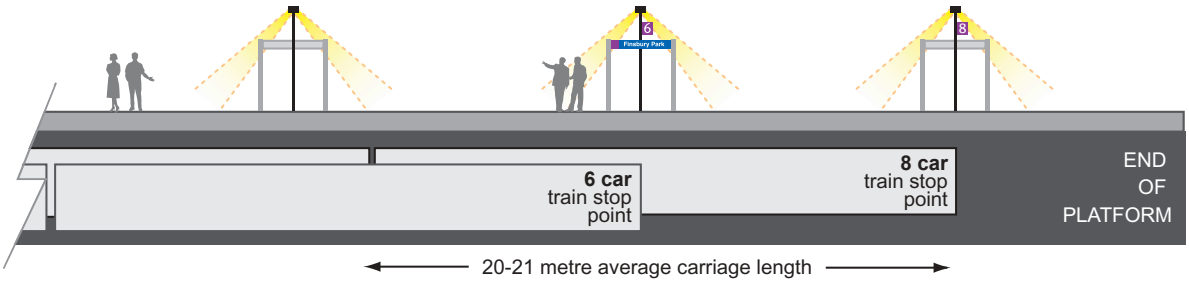
Lamp post *Angle of light*

Recommendations: Category B station, end of platform

Existing station name signs

POTENTIAL PROBLEMS

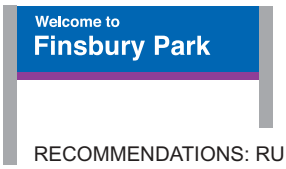
- Readable station name signs only every 20 metres – often none are visible from parts of a 20-metre-long carriage
- Alternate signs have back of sign facing train – station name not visible
- Signs on opposite platforms cannot be relied upon – they are not visible through other trains
- Light from lamp posts is directed along platform – signs located on lamp posts are not illuminated
- Signs usually positioned at 2100mm height from the platform – too high to be visible for many passengers.



Improving station name signs: size, frequency and positioning

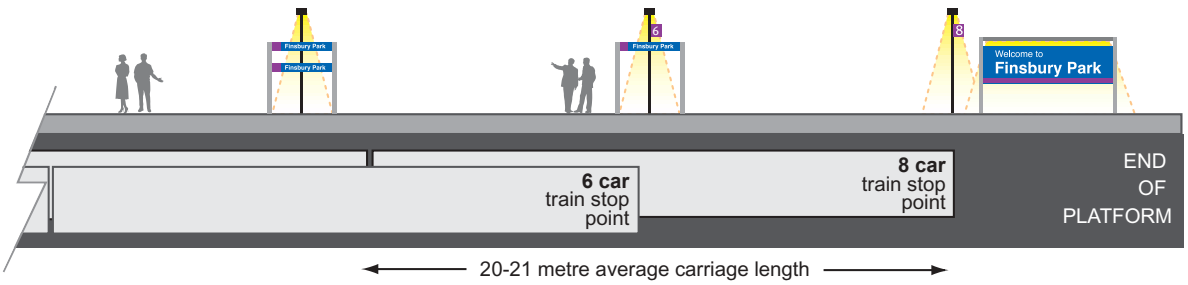
RECOMMENDATIONS: SIGNS

- Signs should be placed no more than 10 metres apart
- Signs should be around 2100mm wide x 300mm deep
- Some lower level signs should be installed at 1400mm from ground
- Text 'x-height' should be 110mm
- Text should be white on dark signs, or dark text on white signs
- Signs should be double-sided where the back can be seen from a train
- Platform lighting should sufficiently illuminate signs, or signs should be directly lit
- Screenprinted text and graphics will last longer on signs
- Anti-graffiti coatings should be added over vinyl
- Signs should have matt finish to reduce glare.



RECOMMENDATIONS: RUN-IN SIGNS

- Signs should be located at both ends of each platform (can be at trackside)
- Signs should be internally or directly lit
- Run-in signs should be larger than other signs – around 3000mm x 600mm.



Key to elements

Different sign sizes. *Station name visible*

Back of sign *Station name NOT visible*

Train car stop signs

Canopy downlights

Lamp post *Angle of light*

6 Acknowledgments

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