Passenger Focus
Designing the Future - Rolling Stock Design
October 2010

Foreword

It is crucial that passengers are involved in the design process of new trains. Passenger Focus holds a unique place within the rail industry in having no vested interest other than ensuring the best possible deal for passengers – the people who will end up using the trains for the next 30 or 40 years.

Building on previous research and experience Passenger Focus has worked together with Transport Scotland to ensure that passenger views, priorities, preferences and requirements are taken into account for future Scottish Rolling Stock design.

From September 2010 a fleet of 38 'Class 380' trains will be introduced on ScotRail services between Glasgow Central and Ayrshire, Inverclyde and Renfrewshire; and between Edinburgh, North Berwick and Dunbar from March 2011. With passenger numbers in Scotland increasing, the new trains will provide more than 7500 additional seats, helping improve the travelling experience of passengers. Whilst the principal beneficiaries of the new trains will be commuters from across the West of Scotland, the introduction of the new trains will also mean that other rolling stock can be released to service the Airdrie to Bathgate line scheduled to open later this year, and improve capacity on Argyll routes. This will provide much needed additional capacity on services connecting stations between Edinburgh and Glasgow.

Transport Scotland, who specify and fund passenger services in Scotland, intend to provide trains that have been designed with the passenger in mind. Each train is to feature spacious seating, wide aisles, air conditioning, power sockets for laptops, luggage provision, space for cycles and wheelchairs and CCTV. In addition to these new trains, Transport Scotland is also in the process of making decisions about the future fleet of trains across Scotland. Given that this future fleet will serve a range of different markets (business, leisure and commuter) it is important that the design of new and refurbished trains meets the wide ranging needs of passengers.

This research therefore reports what passengers consider to be the future design priorities for the internal design of the trains, and what passenger think of the proposed Class 380 trains that will soon be running on their rail network.

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Designing the Future

Rolling Stock Design

Final Report for Passenger Focus and Transport Scotland

May 2010

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Executive Summary

Background

Transport Scotland is committed to strengthening and building upon its current understanding of passenger views, priorities, preferences, and requirements of rolling stock, to help inform the future development of the national rail fleet. To assist Transport Scotland in developing an evidence base, Passenger Focus and Transport Scotland commissioned this qualitative research with the aims of helping to identify Scottish passengers' needs and concerns, enabling these to be compared with those identified in previous Passenger Focus research in England (for new Thameslink rolling stock in particular), and to ensure that passenger interests are foremost in the decision-making process when finalising future rolling stock design specifications.

Methodology

The research comprised a series of nine focus groups and six depth interviews with passengers with mobility and/or sensory impairments. The focus groups were conducted with a range of passenger types including commuters, business and leisure users, as well as infrequent users. The recruitment strategy ensured that, in addition to achieving the required spread of user types, the achieved sample contained a mix of men and women, spread of ages, and was ethnically diverse. Within the final sample, various other passenger types were also represented, including those who had used different ticket types, those who had experience of first class travel, and experience of making journeys with luggage, buggies and bicycles.

A total of 81 focus group participants were recruited from stations (both start/end stations per route, and intermediate stations) and on-board the trains on various routes in Scotland's Central Belt, including:

- Glasgow Queen Street to Edinburgh Waverly;

- Glasgow Central to Edinburgh Waverly, via Shotts;

- Alloa to Edinburgh Waverley/Glasgow Queen Street; and

- Ayr to Glasgow Central.

Interview respondents were recruited via national and local support organisations for people with mobility and/or sensory impairments.

Passengers' design needs and priorities

Comparing findings from this research with those of the research done by Passenger Focus on passenger preferences for new Thameslink Rolling Stock[1], it appears that Scottish passengers share very similar needs and concerns about the current rolling stock in service, and express similar priorities for future rolling stock design.

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[1] Outlook Research (2008) "*Thameslink Rolling Stock Qualitative Research*". Prepared for Passenger Focus, in a joint project with the Department for Transport and London TravelWatch.

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Echoing the views of Thameslink users, Scottish passengers future design requirements are driven by their concerns with:

- the ability to get a seat;

- comfort of seating;

- ease/safety of boarding/alighting the train;

- safety of standing areas;

- provision and safety of adequate luggage space;

- on-board temperature;

- the provision of on-board information/announcements; and

- general cleanliness.

These basic needs and concerns, which shape passengers' design preferences, appear to be shared by commuters, business and leisure users across parts of the Scottish rail network that this research covered.

Key areas for attention in future design

Priorities for attention in future design were clearly identified within each of four design-sensitive areas of passenger need and concern:

- comfort during the journey (whether seated or standing);

- facilities on-board;

- information provision; and

- ease of access on/off, and movement inside the train.

Comfort during the journey

Respondents identified key areas for achieving comfort during the journey, both when seated, and when standing. The design considerations for improving seated and standing comfort are, however, different. This research, in contrast with research on Thameslink rolling stock design, suggests a more widespread expectation in Scotland that all passengers should be able to get a seat and should not have to stand; irrespective of journey purpose, time of travel, or station boarded. However, there was a reluctant acceptance by respondents that standing is inevitable on occasions, and that it is only sensible to improve comfort for standing passengers in future designs.

To mitigate the discomfort of standing, respondents observed (again with reluctance) that sufficient space should be allocated, and designed to minimise blockage of movement on/off and through the train. The reluctance expressed was with reducing seat capacity to achieve this purpose. To improve the safety and comfort of standing, passengers felt having plenty of well-positioned hand holds and grab rails is a key requirement, particularly in the door areas. A design challenge emerging is the need to reconcile the benefits of allocating space for standing close to carriage entrance/exits and passengers' concerns that this could impede boarding/alighting access at station stops, including for wheelchair users.

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An additional design challenge concerned the importance of having comfortable seats, without significantly compromising legroom, numbers of seats or aisle width. The suggestion from passengers is that there should be minimum standards for legroom and aisle width, with seating dimensions and seat numbers optimised accordingly.

Additional needs and improvement areas identified were:

■   tables and table seats appear to be preferred by most passengers, particularly those who use laptops/wish to work and passengers who travel with guide dogs;

■   armrests are important and should all be foldable, including the ones next to the window, but not too narrow;

■   air conditioning/temperature control is important and airline-style at-seat adjustability is desirable; and

■   design of carriage lighting should deliver: good natural light, well positioned electric lights, windows at all seats and optional window blinds.

On-board facilities

The design priorities and key improvement areas identified in respect of on-board facilities were centred on passengers' needs for functional efficiency of toilets, gangways, handrails, and luggage storage facilities, combined with the need to feel that they and their belongings are safe and secure so that their time on the train is relaxed, not stressful or anxious.

Design priority and improvement areas identified by passengers were:

■   more and/or bigger bins;

■   spacious, clean, comfortable toilets with locks and controls that are easy to understand and use. Facilities that passengers identified as desirable included hand dryers (rather than tissues), sanitisers, materials/facilities which can be easily cleaned, and provision of handrails. Additional needs identified by mobility and visually-impaired passengers included space to manoeuvre a wheelchair and accommodate a carer, and prominent colour-contrasting door locks and controls, with consistency across rolling stock;

■   the need for designers to re-assess the location of luggage areas at the end of carriages, along with luggage security itself. Current designs caused concerns over safety and security against tampering and theft; and

■   not merely incorporating essential safety features but making them visible. Facilities included CCTV, fire extinguishers, 'help' points, signage for first aid and emergency exits, and handrails/grab handles to aid standing/walking in the carriage.

Information

Most respondents identified needs for enhanced on-train information. Disabled passengers identified several information-related improvements as being particularly important for their specific needs, though these would also be of benefit to other passengers.

Priority design areas identified were:

■   visual and audio announcements that are clear, concise, and provide comprehensive information including: next stop information; final destination; estimated time of

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arrival/time remaining until next stop; information about delays, cancellations and emergencies;

■ dynamic route maps displaying the train's progress and which station it is approaching; and

■ external information displays on the front and sides of trains prominently indicating the train destination, departure time and carriage number.

In addition, passengers with disabilities identified headphones to hear announcements and loop systems at priority seating, large-print formats for written information, Braille on door entry buttons, handles and the controls in toilets.

Ease of access

Safe and easy access getting on/off the train and moving inside is important for all passengers. Although accessibility improvements were prioritised more highly by respondents with mobility and sensory impairments, many (though not all) would bring benefits to other passengers.

Areas where there are concerns with existing stock, and where improvements should benefit all passengers, include:

■ minimising the gap between the carriage entrance and platforms (in both vertical and horizontal planes);

■ integrated automatic ramps under doors to facilitate boarding and alighting, and reduce delaying the train at station stops; and

■ more clearly contrasting colours to aid easy recognition of doors, entry/exit buttons, handrails, toilet facilities, and priority seating.

Areas where improvements identified by disabled passengers could potentially disbenefit other passengers included more priority seating and increased space in the toilets. The design challenge here being the balance between the competing demands of limited carriage space, seating capacity and toilet provision.

Additionally, and underlying some of the more specific needs and priorities expressed above:

■ most passengers emphasised the importance of having clean conditions on-board, so that 'design for cleanliness' was a key emerging theme. In this context passengers identified needs for more and/or larger litter bins to prevent rubbish accumulating, and would welcome designed-in cleanliness through (for example) use of durable non-staining fabrics, seating and flooring materials, scratch-proof glass, etc.

■ disabled passengers, particularly, want and need consistency across rolling stock design: it is particularly important for visually-impaired passengers to know with confidence where to find and how to operate doors, toilets, access buttons, and seats, and to not have to struggle with stock-specific variations. While improvements are wanted, new designs should be compatible with existing rolling stock in these respects to avoid causing unnecessary challenges.

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Variation in passenger views by route and journey type

In many respects there was close agreement in the key requirements for future rolling stock expressed by passengers using different routes and making different types of journey.

Some differences did, however, emerge:

- Journey purpose - business users, and to a lesser extent leisure users, attached higher priority to design aspects that help them make constructive use of their journey time: wi-fi, power sockets, tables allowing use of laptops and good mobile phone coverage. These were all less important for commuters.

- Journey time - Peak period users want designers to mitigate problems of capacity, including providing more efficient luggage space and plenty of handrails/holds for safer, more comfortable standing. Off-peak period users emphasised priority for comfort of seats, a preference for tables, confidence of not needing to stand, and greater likelihood of being able to sit with companions.

- Journey routing **-** There are few apparent differences between passengers using different routes. However, one exception was that users of the Edinburgh - Glasgow lines, who currently have more tables per carriage than the Class 380 mock-up, were keen to retain their existing table provision.

Passenger reactions to the Class 380

Approval for the Class 380 was positive in respect of seating; efficient provision for luggage both under seats and at tip-up seats; power points; CCTV; and the electronic information displays, both internal and external. The tip-up seat design on the Class 380 was particularly welcomed as it provided flexible space.

The main shortcomings of the Class 380, identified by passengers, were the lack of tables and the size of the small tables; insufficient hand holds for standing passengers (especially those standing near the doors); a lack of litter bins; and the location of the storage racks by the doors where they cannot easily be seen by seated passengers.

Suggested improvements to the Class 380 were the addition of wi-fi and airline-style individually controllable air conditioning outlets.

Overall conclusions

The new Class 380 design appears to address many of the issues identified by respondents in respect of current stock, and it incorporates many of the design features they desire in the future. The research has, however, identified a number of areas where passengers feel further improvements could be made.

While it is acknowledged that the Class 380 and other trains in Scotland comply with current design regulations, it was clear that many respondents expect the on-board facilities, to exceed minimum standards in order to improve their current rail journey experiences.

Most design features identified are common across user types and routes, albeit that certain busier routes require additional consideration to be given to capacity issues, and where the lines connect with Scotland's airports, luggage issues are more important. Only a small number of truly additional features are required by passengers with mobility/sensory

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impairments, which are largely compatible with the needs of other passengers. Only a minority of the proposed requirements are likely to result in conflicting priorities which will need to be addressed by the operating companies.

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1   Introduction

1.1   Background

1.1.1   **Passenger Focus** is the independent public body set up to protect the interests of Britain's rail passengers and, from 2010, England's bus, coach and tram passengers outside of London. Its mission is to get the best deal for passengers through evidence-based campaigning and research, and aims to influence decisions and secure improvements to the journey experience.

1.1.2   For rail, this is achieved through five strategic objectives:

- understanding the needs and experiences of rail passengers;

- securing tangible and measurable improvements for rail passengers;

- empowering rail passengers with information, advice and advocacy;

- influencing major long-term decisions that affect rail passengers; and

- being visible, accessible and understood by rail passengers and stakeholders.

1.1.3   As part of the UK review of the rail industry, it was agreed that greater responsibility for railways and rail transport in Scotland would be devolved to Scottish Ministers. As such, Transport Scotland now has responsibility for the majority of rail powers in Scotland.

1.1.4   **Transport Scotland** is the national transport agency for Scotland, whose purpose is to help deliver the Scottish Government's vision for transport in Scotland, making a real difference for people and businesses using the national rail and road systems[2]. Its key aims are to:

- ensure that Scotland's trunk road and railway systems are managed efficiently, effectively and economically;

- establish and run national concessionary travel schemes;

- deliver the Scottish Government's committed programme of enhancements to Scotland's rail and trunk road infrastructure;

- help to build Scotland's National Transport Strategy by advising ministers on investment priorities for tomorrow's rail and trunk road networks; and

- deliver its business to the highest standards by using public resources efficiently.

1.1.5   Scotland's rail network has around 340 railway stations and 3,000 kilometres of track; over 81 million passenger journeys are made on the network each year[3]. Further, the rail network in the west of Scotland is the most heavily used commuter network in the UK outside London and caters for around 60% of passenger journeys made in Scotland[4].

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[2] http://www.transportscotland.gov.uk/about-us/our-vision

[3] http://www.transportscotland.gov.uk/rail

[4] Ibid.

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1.1.6   The current Scottish rolling stock fleet is comprised of a mixture of diesel and electric trains of varying age and specification. It is due to be enhanced shortly, by pre-ordered Class 380 units (a mock-up of this was available to view at the Museum of Transport[5] at the time of the research and the focus groups were asked to comment upon its design features), and important decisions on refurbishment and replacement of existing rolling stock will need to be taken in the near future.

1.1.7   As such, Transport Scotland wishes to strengthen and build upon its current understanding of passenger views, priorities, preferences, and requirements of rolling stock, to help inform the future development of the national rail fleet. To help achieve this objective Passenger Focus and Transport Scotland commissioned this research to ensure that passengers' needs and concerns are foremost throughout the decision making when the future rolling stock design specification is finalised.

1.2   Research Aims and Objectives

1.2.1   The main aim of this research is to assist Transport Scotland to build on its understanding of the rolling stock issues affecting Scottish rail passengers in order to inform future investment, enhancement and development of the rolling stock fleet. To this end, qualitative research was undertaken to establish passengers' views of existing stock, and explore their needs and priorities for new rolling stock design. This will afford Transport Scotland, the Scottish Government and First ScotRail, detailed information from which to draw specifications as they continue to invest in and improve the Scottish Rail network.

1.2.2   In addition to the core aims, the research also had five specific objectives:

- **Objective 1** - Understand passengers' views about the design of new rolling stock for Scottish services;

- **Objective 2** - Provide advice about the key passenger issues in respect of the internal specification of the new trains and the facilities to be provided on them;

- **Objective 3** - Understand passengers' views about the design of existing rolling stock to inform planned refurbishment, as the trains will be in service for many years;

- **Objective 4** - Provide advice about the key passenger issues in respect of the internal specification of the existing trains and facilities provided on them; and

- **Objective 5** - Explore the views of infrequent rail users to ascertain if the presentation and facilities provided on trains is a barrier to rail use.

1.2.3   Each of these objectives will allow the formation of an extensive evidence base of the requirements of passengers on the Scottish rail network, which decision makers can draw upon as they further develop the rolling stock infrastructure which will serve passengers in Scotland in the coming years.

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[5] Museum of Transport, 1 Bunhouse Road, Glasgow.

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2   Methodology

2.1   Overview

2.1.1   The research consisted of mixed qualitative techniques, comprising a series of focus groups and depth interviews.

2.1.2   Various segments of the current rail passenger market were recruited for the focus groups, in addition to infrequent users. It was considered important to include the views of infrequent users in this research as individual circumstances may change, with infrequent users relocating (either home, work, or both) nearer to rail links, or in the event that disused rail links may be re-established, or where new lines are introduced. These infrequent users were considered important, as potential future users. Understanding the impact of rolling stock issues on non-usage will also help establish how to attract infrequent users onto trains in the future.

2.1.3   Depth interviews were conducted with passengers with mobility and/or sensory impairments. As passengers with impaired mobility, vision or hearing are likely to have specific needs and concerns, it was considered more appropriate to obtain their views via depth one-to-one interviews. Thereby ensuring that sufficient time and weight was attributed to their issues.

2.2   Focus groups

Achieved sample

2.2.1   A total 81 respondents participated across nine focus groups, which were held across a two week period in March 2010. The groups were structured as follows:

- Group 1: daily commuters travelling in the peak from stations between Glasgow Queen Street and Edinburgh Waverley inclusive, using ScotRail services.

- Group 2: leisure and business users travelling in the off-peak between Glasgow Queen Street and Edinburgh Waverley inclusive, using ScotRail services.

- Group 3: daily commuters travelling in the peak from any station between Glasgow Central to Edinburgh via Shotts.

- Group 4: leisure and business users travelling in the off-peak from any station between Glasgow Central to Edinburgh via Shotts.

- Group 5: daily commuters travelling in the peak from any station between Alloa and Edinburgh Waverley/Glasgow Queen Street.

- Group 6: leisure and business users travelling in the off-peak from any station between Alloa and Edinburgh Waverley/Glasgow Queen Street.

- Group 7: daily commuters travelling in the peak from any station between Ayr and Glasgow Central.

- Group 8: leisure and business users travelling in the off-peak from any station between Ayr and Glasgow Central.

- Group 9: infrequent rail users.

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2.2.2   Our recruitment strategy ensured that, as well as achieving the required spread of user types (i.e. commuters, business and leisure users, and infrequent users), the achieved sample contained a mix of men and women, a spread of ages, and was ethnically diverse so far as possible for the Scottish population. Within the total sample, various other passengers were also represented, including:

- ticket type - those who use season tickets and those who purchase tickets daily;

- class of travel - those with experience of travelling first class (recruitment for this element was restricted to the two groups using the Glasgow Queen Street to Edinburgh Waverley route as this is the only route within the sample to provide first class accommodation. However, a number of other respondents had experience of this facility on other non-Scottish routes); and

- Passengers with specific needs - those with experience of making journeys with luggage, buggies and bicycles.

2.2.3   Groups 1, 4 and 6 were held in Edinburgh, while all other groups were held in Glasgow. All Glasgow groups were held in the Scottish Museum of Transport[6] where access was provided to the mock-up of the new Class 380 train. This facilitated detailed discussion of the new features provided by the design and allowed respondents to identify how well it would meet their needs as well as discuss elements for further/future improvements. Meanwhile, all Edinburgh groups were shown pictures of the Class 380 (and one group was also shown the online virtual tour[7]) as well as pictures of trains running on the English rail network to stimulate discussion of potential design features. It should be noted that those respondents with access to the Mock-up of the Class 380 were able to provide fuller feedback on this design than those who only had access to the pictures/virtual tour.

Recruitment

2.2.4   Recruitment of train users was undertaken at a variety of stations and on-board the trains along the relevant routes, this ensured that the sample included a selection of participants who travel end-to-end and who board at intermediate stations. Infrequent users were recruited on-street in Glasgow city centre. Recruitment questionnaires were designed to structure the sample against various quotas specific to each group.

2.2.5   A short pro-forma questionnaire was designed and provided to participants when they were recruited (attached at Appendix A). This questionnaire was designed to log details of one journey made by the participant between the time of recruitment and them attending the groups, as well as recording levels of satisfaction with various elements of the on-board environment. This questionnaire was intended to get the respondents thinking about rolling stock design and how it could be improved to meet their needs, and to help inform the focus group discussion by providing examples of specific journeys.

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[6] Museum of Transport, 1 Bunhouse Road, Glasgow.

[7] www.scotrail.co.uk/newtrains

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Topic guide

2.2.6   The topic guide for each group contained the following sections/topics:

- introduction;

- background to participants' travel patterns;

- on-board experiences;

- a brainstorming exercise to describe their 'ideal train';

- response to design stimulus materials;

- more detailed discussion of design specifics, included;

  - accessibility;

  - comfort;

  - facilities;

  - cleanliness;

  - information;

- identifying design priorities; and

- a concluding summary of the group.

2.2.7   In recognition that different passengers are likely to have different needs/priorities, those groups which combined business and leisure users were split into mini-groups to undertake some of the tasks, such as the ideal train exercise.

2.2.8   Topic guides are included at Appendix B.

2.3   Depth interviews

2.3.1   A total of six depth interviews were conducted as follows:

- 2 adults with mobility impairments (at least one of which would require a wheelchair when travelling);

- 2 adults with visual impairments; and

- 2 adults with auditory impairments (which required the services of a signer).

2.3.2   In all but one instance, face-to-face interviews were arranged. One mobility-impaired respondent preferred to be interviewed by telephone. The topic guide used for these interviews was similar to those used for the focus groups above, although they were tailored to include discussion of requirements specific to their impairment, and incorporate additional impairment specific prompts. The group activities were replaced with a discussion with the interviewer.

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2.3.3   Participants were recruited via support organisations, including:

- Scottish Guide Dogs for the Blind;

- Scottish Council on Deafness;

- Scottish Disability Equality Forum, including;

    – Fife Independent Disability Network; and

    – North Ayrshire Access Forum.

2.4   Research caveats

2.4.1   It should be noted that this research consisted of qualitative techniques, and as such, the sample size is relatively small and not statistically robust. We do not claim that the results presented here provide a representative view of all passengers' views; rather they are the views of the individual respondents and reflect their personal experiences. Respondents were selected exclusively from routes in the Central Belt[8], and as such, results should not be considered as nationally representative, indeed, regional differences outside the central belt have not been considered.

2.4.2   This research was concerned with the physical design features of rolling stock, and not with other aspects of rail travel, e.g. tickets, fares, stations, timetables, reliability, etc. Although some other issues were outlined by respondents, these have been passed to Transport Scotland and Passenger Focus separately, and as such, they have not been included in any detail in this report.

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[8] The Central Belt of Scotland is a common term used to describe the area of highest population density within Scotland, and is used in many local government, police and NGO designations. The larger Central Belt is a trapezoid stretching from Dundee, to Ayr, and Dumbarton to Dunbar. This also takes in fairly densely populated areas such as Ayrshire, Fife, Midlothian and East Lothian. This area encompasses all the major cities of Scotland, except for Aberdeen and Inverness which are located in the North of the country.

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3 On-Board Experiences

3.1 Introduction

3.1.1 All groups were asked to describe their general feelings/perceptions of current rolling stock in Scotland. To assist the infrequent users in this, they were shown a series of pictures of the internal layout of different types of train.

3.2 Perceptions of current rolling stock

Appearance

3.2.1 There was a general perception that current stock is old and in need of refurbishment. Common sentiments across all groups included that they were "*old and dated*", "*tatty and tired*", "*worn*", and "*run down*". Even the infrequent users group commented that "*often the upholstery is ripped*".

3.2.2 In addition, visually-impaired interview respondents were not favourable towards current on-board facilities, especially on the older trains:

> "*[The older trains] need to be scrapped as they are not suitable for use anymore. [Some] are past their sell-by date and are still used for longer journeys. They have been refurbished but are not air conditioned, are not comfortable, the soundproofing is awful and the audio visual does not always work. Newer trains are more comfortable and the audio is better.*"

3.2.3 However, some respondents in the Glasgow Central/Edinburgh Waverly business and leisure group felt that there had been an improvement in the appearance of the trains:

> "*although appearance may have put people off in the past, as they used to look grubby, there has been a slight improvement, but there is still room for improvement.*"
>
> "*a lot better than what they used to be, greatly improved.*"
>
> "*There are newer trains on some of the routes where they used to be terrible. They seem bigger and cleaner, and more spacious.*"

3.2.4 Respondents were less interested in the branding/colours used on-board; no strong feelings regarding the nature of the current branding were expressed.

Cleanliness

3.2.5 Many passengers commented that the cleanliness of the carriages themselves and the toilet facilities are not of a high standard. This was an emotive topic that many respondents felt strongly about. Some passengers felt that the cleanliness of trains declined towards the end of the day.

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3.2.6   Respondents complained that litter is often left in the carriages, and that both the carriages and the toilets are often dirty. They felt that they were not being cleaned frequently enough, and that the toilets are out of order too frequently. It was suggested by some respondents that there are not enough, and/or not large enough litter bins provided on-board. However, other respondents did acknowledge that, even where bins are provided, passengers do not use them. Some added that there should be signs warning of fines should they leave litter.

3.2.7   Comments were also received on the lock type provided on the toilets. Most passengers did not like the electronic button entry and lock system found on many trains as they "*do not feel confident or secure*". They explained that they would rather have a mechanical locking fixture on the toilet doors.

Comfort

3.2.8   Respondents placed a high priority on the ability to get a seat, and did not expect to have to stand on any journey.   However, some respondents commented that they often had difficultly in getting a seat (off-peak Glasgow Queen Street to Waverley, and in both Ayr to Glasgow groups).   It was felt that the problem of crowding was exacerbated on the Ayr/Glasgow line due to people travelling to Prestwick Airport with luggage, combined with too few carriages being provided per train (i.e. three instead of six).

> "*they forget that on this line [the Ayrshire line] we service the Arran Ferry and Prestwick Airport and they both involve people travelling… sometimes you are climbing over cases just to get in the train … and you also get the people travelling from here [Ayrshire] to Glasgow Airport who change at Paisley*".

3.2.9   One commuter group identified improving capacity on the Ayrshire line as the key improvement required. The group pointed out that on particularly busy services such as the Ayrshire line, standing is almost inevitable. If this is accepted, then new trains should be designed with suitable standing areas; designed to allow passengers to travel safely when standing.

3.2.10   Most respondents felt that those seats with tables were the most comfortable and provided the most legroom, and were therefore, the most popular. However, some felt that tables which tapered at the aisle end were less suitable as this did not provide enough room to use a laptop or to work from a folder. Some also indicated that, even at a full sized table, space for working was restricted if all the surrounding seats were occupied or if people were standing in the aisle.

3.2.11   Respondents appeared to place a high value on space which would allow them to use a laptop, with many (in both commuter and business/leisure groups) complaining that you could not use a laptop unless you were able to get a seat at a table. Those seats without tables or with fold down trays were not considered suitable for opening and using a laptop.

3.2.12   Many respondents, across all user types, commented that there is not currently enough legroom. Some respondents had a preference for seats to be arranged in twos or fours facing each other, and did not like those where three were provided in a row. Others also indicated a preference for armrests at all seats as "*this gives a feeling of personal space*". A number of respondents said they prefer to face the direction of travel and did not like travelling backwards.

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3.2.13   Some female respondents commented on the uncomfortable nature of the material used as seat covering. This was particularly an issue for women wearing skirts. They commented that the current material, although hard wearing, was uncomfortable, pulled at their tights and rubbed at their legs.

3.2.14   Heating was raised as an issue by a few respondents, "*sometimes it does not work, yet sometimes it's too hot.*"   Others complained that their trains "*are always cold*".

3.2.15   Some commuters were, however, positive about their service, explaining that:

- "*space is alright*";
- "*comfort is alright, it's better than a bus*";
- "*comfort is not too bad*"; and
- "*Ayr to Glasgow is a good service*".

3.2.16   Infrequent users also felt that, although there are particular issues on-board trains, they are generally better than buses:

- "*there is not generally a lot of space on trains, especially if you have a pram; but it is better than on a bus.*"
- "*the width of the aisles look small, but bigger in comparison with the bus.*"
- "*legroom looks relatively spacious, better than the bus.*"

Security

3.2.17   Security on-board was highlighted as an issue, albeit by a smaller proportion of respondents. This related to both personal safety and the security of luggage that has to be left in the luggage racks at the end of carriages.

3.2.18   Despite there already being CCTV on-board, some felt that this was not well advertised and therefore did not provide much of a deterrent, while others felt that additional security measures, such as on-board staff, may serve as a deterrent to trouble.

3.2.19   Many respondents who had experience of travelling with luggage were particularly uncomfortable with leaving this at the end of the carriage where they could not see it. A comparison was drawn between security of luggage on-board a train, and in an airport where you are not allowed to leave your bags unattended and where you are asked if someone could have put anything in your bag. Passengers pointed out that if you have travelled to the airport by train, then your luggage has probably been out of your sight at some point. Others mentioned this in connection to more valuable luggage such as laptop bags, which they prefer to keep with them at all times; they commented that they would not leave these in the designated luggage areas, no matter how busy the train was.

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Space for luggage

3.2.20   Some respondents (across all groups and user types) commented on the suitability of the space allocated for luggage. They felt that "*luggage provision can be a bit of a problem*" in that not enough space is provided, particularly on routes that link with Scotland's airports:

> "*There's not enough space for luggage, especially if you are going to Glasgow Airport. You have to fight for luggage space sometimes.*"

3.2.21   The width of the aisles were also criticised by those with experience of carrying luggage:

> "*There is not enough space to walk around the carriages with bags or luggage.*"

Information provision

3.2.22   Comments in relation to information provision generally concentrated on announcements. However, respondents' views on this were mixed. Some commented that they felt this was "*quite good, and the audio has improved a lot since it went digital*". Others complained that there was often a problem with the volume and/or pitch of the announcements, and that they can be "*either too loud or too quiet*". For a number of passengers there was no preference between live driver announcements and pre-recorded automated announcements, provided they are clear and audible.

3.2.23   Generally, respondents said they liked the information displays and announcements. However, some highlighted that these facilities are not available on all trains and that, even where they are provided, they are not always working.

Handrails

3.2.24   From the pictures they were shown of existing rolling stock, the infrequent users group indicated that they did not think there were enough handrails and/or vertical poles on-board trains, especially in the middle of the carriages. They felt this was a problem/safety issue, particularly for elderly people moving about whilst the train is in motion.

3.2.25   The commuter and business and leisure groups did not discuss handrails when considering their perceptions of current rolling stock. However, many of the groups went on to mention them at later stages in the focus groups.

3.3   Lessons from other TOC's and other modes of transport

Other Train Operating Companies

3.3.1   There was a general perception across the groups that the British rail network has not kept pace with the improvements across Europe and other parts of the world:

> "*In Europe, it's a different world, you have trains over two storeys.*"
>
> "*It seems like the British transport system is trying to catch up.*"

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3.3.2   In particular, many respondents were impressed with the double-deck trains in Europe and Canada, and also with the bullet train in Japan. They commented on how much space there was on-board, how reliable and/or fast they were, and how clean they were.

3.3.3   Other countries mentioned, which respondents felt had good services included:

- **Holland**:
    - *"on-board Dutch trains you can still work out where you are going and how to get there"*.
    - *"in Amsterdam, you pay for your ticket on the train which is much easier."*
- **Switzerland** – *"trains in Switzerland are brilliant; they are clean, there is no damage, there are vending machines, and there is lockable luggage storage."*
- **Italy and France** – *"I've been on trains in Italy and France which are superb, particularly the cleanliness and the amount of space on-board."*
- **China** – *"trains in China are good too, they are very fast."*

3.3.4   Some of the British trains used for longer journeys were also discussed, including the Voyager and Pendolino trains:

> *"Voyager trains are a lot more comfortable."*
>
> *"I like the Pendolino train to London as it has more space and the toilets are quite big and there's more of them. They also have a food carriage."*
>
> *"seats on Virgin trains are very comfortable; they are better designed, they're more like an aeroplane."*
>
> *"Virgin are good; there are more tables, the staff are more civilised, the trains are cleaner, and there's generally more space."*

3.3.5   Some interview respondents stated that they liked the headphone points between seats, but acknowledged that while these are a novelty they are not an essential element. They also stated that w-fi is considered a plus point when it works. These respondents had also been impressed by the trains on the Aberdeen to Dundee line because:

- they are well laid out;
- bright and well lit;
- have plenty of space;
- announcements are well done (digital pre-recorded messages);
- they use contrasting colours;
- armrests provide support to get out of your seat; and
- they are generally comfortable.

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3.3.6   Particular facilities that had impressed focus group respondents included:

- standing room areas;

- quiet coach/carriage;

- larger, more spacious toilets;

- tip-up seats (making it easier for passengers to get out of their seat, although respondents did consider this feature to be "*a bit of a luxury*")

- smoking rooms; and

- cameras on every train.

Other modes of transport

3.3.7   Respondents were asked if anything can be learnt from other modes of transport, either in the UK or abroad. Attributes identified by current rail users included:

- wi-fi available on-board buses;

- TV screens on-board buses; and

- individual air-vents/air-conditioning on buses.

3.3.8   Infrequent users felt buses in France and Italy are better, cleaner and more spacious.

3.3.9   Encouragingly, some current users felt that the train was better than the bus or planes due to the availability of space, extra legroom, and the ability to "*get up and walk around*". However, some did feel that the train should also be as clean as an aeroplane.

3.4   Key requirements

3.4.1   One of the main key requirements for both commuters and the business and leisure users was improved toilet facilities. This was mentioned by most groups and included issues such as cleanliness, ensuring toilet roll and hand soap/sanitiser is provided, and that they are not out of order.

3.4.2   Other key requirements for both commuters and business and leisure users include:

- comfortable seats;

- the amount of legroom provided;

- more tables;

- wider aisles;

- adequate space for luggage;

- adequate space to manoeuvre and travel with prams, buggies and wheelchairs;

- adequate bicycle facilities/storage;

- disabled access, such as ramps and/or reduced gap between the carriage and platform;

- air-conditioning/temperature control/ventilation; and

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- general cleanliness.

3.4.3   Most commuter groups also identified hand holds/rails to aid standing as a key requirement.

3.4.4   Both commuters and business users mentioned plug sockets, wi-fi and the ability to open and work on a laptop. However, these were considered a lower priority by these groups in comparison with seating, legroom, aisle width, toilet facilities, handrails and luggage space.

3.4.5   Infrequent users found it difficult to identify their key on-board requirements as they indicated they would generally use the car or bus, as it was more convenient and provided closer access to their final destination. They did not reject the train as a mode of transport due to the on-board environment/facilities. Some indicated that they would only use the train for longer distances, and that the on-board environment/facilities would not make much difference in determining whether they took the train or not.

3.5   Key Improvements to Existing Rolling Stock

3.5.1   The main elements for improvement identified across most groups included:

- general appearance;
- availability of a seat; and
- comfort of seats.

3.5.2   Extra space was also identified as a priority for improvement, particularly at those seats with no tables:

> "*It's OK at the ones with the tables, but the ones where it's just two seats… there isn't much room.*"

3.5.3   Other elements that were identified, albeit by fewer respondents, included:

- luggage racks/more luggage space (commuters, and business and leisure). Although some felt that the overhead racks are generally fine, the concern was with leaving luggage at the end of the carriages where they could not be seen (business and leisure);
- increased legroom, particularly on longer journeys (business and leisure);
- more full-sized tables (as opposed to the folding tables on seat backs or half-sized fixed tables) as these allow more room to work if people choose to;
- the option to face the way that the train is facing (business and leisure); and
- a better way of displaying that seats are reserved (business and leisure).

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4   Ideal Train

4.1   Introduction

4.1.1   Participants in all focus groups were split into mini-groups and asked to think about what the features of their ideal train would be, while interview respondents were asked to describe their ideal train to the interviewer.   Respondents were asked to consider the following headings in their brainstorming/descriptions, but were not provided with any other prompts:

- design;

- appearance;

- safety;

- comfort;

- seating;

- toilets; and

- other aspects.

4.1.2   After compiling the description of the features of their ideal train, the groups came back together to identify and discuss those features which were considered most important.

4.2   Ideal train descriptions

4.2.1   A summary of the main elements spontaneously identified most often across all user groups included:

- a clean and modern interior (to include easily maintainable materials);

- comfortable seats (which included elements such as large, roomy chairs; leather seats; reclining/adjustable seats; heated seats; movable armrests; high head rests);

- adequate legroom;

- temperature control (ideally individually controlled air vents above each seat);

- more luggage space (including under/between seats, overhead and in designated luggage racks) which is more secure (examples included lockers and overhead compartments with doors as found on aeroplanes);

- cleaner and bigger toilets (to include features such as hand sanitisers; hand dryers; baby changing);

- wi-fi;

- power points;

- increased and noticeable safety features (including CCTV; button to contact the driver/train staff; fire extinguishers, break glass hammers and signs; exit signs; and first aid signs);

- handrails to aid standing; and

- more, larger and obvious bins.

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4.2.2   Wider aisles were mentioned across all user types, albeit by fewer respondents. Increased capacity was referred to by all focus group user types. Commuters, business, and leisure users all called for an increased number of carriages during peak times, whilst infrequent users simply indicated there should be more seats.

4.2.3   The train's livery was mentioned by all user types. Commuters said their ideal train would have brighter/lighter fittings, business and leisure users said there should be a better outside appearance e.g. colourful and not so tatty, and an improved internal colour. Infrequent users stated they would use plain modest colours. Meanwhile, one interview respondent described "*blue seating with the Saltire flag on it to give it its Scottish identity and contrasting tables and walls to complement the seats and floors*".

4.2.4   Commuters, business and leisure users all listed wider doors, more tables, and the provision of multi-media facilities, such as TVs/movies, radio, games, and headphone sockets; particularly for longer journeys. They also described features that would enhance accessibility, such as ensuring the gap between the platform and carriage was minimised, ramps were available, and that more space would be provided on-board for wheelchairs, buggies, prams and bikes. Unsurprisingly, improved accessibility was also the main ideal train feature for interview respondents with mobility impairments.

4.2.5   Catering facilities were mentioned by a few commuters, business and leisure users, as well as some of the interviewees; this included a lounge area, bar facilities, vending machines, and a water machine/container. Likewise, more interior space (including head room) and good lighting was listed by a few commuters and business and leisure users.   This included clean windows with blinds (also mentioned by interview respondents), and individual lights (that were of an appropriate brightness) located at each seat.

4.2.6   Information was important to commuters, as well as the hearing and visually-impaired respondents, who identified accurate audio and visual announcements as features of their ideal train. Proper route destination and carriage numbers displayed on the outside of the carriage was also important to these respondents; whilst hearing-impaired respondents suggested a map which lights up to show you where you are on the route and which station you are approaching.   Commuters also mentioned the provision of timetables and information on local areas.

4.2.7   Commuters included designated standing areas as a feature of their ideal train, which allowed passengers to stand more comfortably through the provision of handrails etc, while business and leisure users identified constant mobile phone reception.

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4.3   Most important design features

4.3.1   Table 4.1 details those **design** elements that were identified as the most important by each user group.

Table 4.1 Most important features - design

	Commuters	Business and leisure	Infrequent users
Clean and modern	✓	✓	
More space in the aisles	✓	✓	
Smaller gap between the train and the platform	✓	✓	
Bigger/wider doors		✓	
Clear destination display	✓		
Faster		✓	
Front facing seats	✓		
More overhead storage			✓
More seats with a table	✓		
Real-time information, including information on connections	✓		
Seat layout		✓	
Space		✓	

4.3.2   Across the groups, a clean and modern appearance, more spaces in the aisles, and a smaller gap between the train and the platform were identified as being amongst the most important features by commuters, business and leisure users alike.

> *"The gap between the station platform and the train itself is too big, particularly when the train is packed with standing room only."*
>
> *"If it looks good on the outside, they'll assume it looks good on the inside."*
>
> *"If something looks nice people want to go on it."*

4.3.3   Infrequent rail users felt that more overhead storage was the most important design feature. Although providing more and/or a different means of storage space for luggage was discussed and highlighted as a valued aspect by business and leisure users. This was both when describing their ideal train and later on in the focus groups; though this did not emerge as one of their most important design features of an ideal train.

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4.3.4   Table 4.2 details those features related to appearance that each user group indicated was amongst the most important features.

Table 4.2 Most important features - appearance

	Commuters	Business and leisure	Infrequent users
Cleaner	✔	✔	
Modern	✔	✔	
Brighter (natural lighting is best)	✔		
Not as bright		✔	
More visible bins	✔		

4.3.5   Across the groups, a clean and modern appearance was again identified as one of the most important features by commuters, business and leisure users.

> *"Just something which doesn't look so colourful and 'in your face' when you walk in."*
>
> *"Something that is colourful and aesthetically pleasing, but doesn't give you a headache when you look at it."*

4.3.6   Infrequent rail users did not identify any individual feature relating to appearance as being amongst their most important features. Further, appearance overall, was not highlighted as one of their most important features.

4.3.7   Table 4.3 details the most important safety features as identified by each user group.

Table 4.3 Most important features - safety

	Commuters	Business and leisure	Infrequent users
Handrails	✔	✔	✔
CCTV	✔	✔	
Clear entrance and exit		✔	✔
Gap reduced	✔	✔	
Ramps for wheelchairs that are easier to use	✔	✔	
Security	✔		✔
'Break glass' and 'fire exit' signs		✔	
Safety checks	✔		
Seatbelts			✔

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4.3.8   Due to their nature/purpose, safety features were generally regarded as being some of the most important features. Across the groups, handrails were the only feature identified as one of the most important by all users groups for this aspect of the design. Some respondents said these were particularly important given that there is so much standing space on trains, and indicated that they were particularly important for older passengers who might have problems moving around the carriages. Others said there should be more handrails in the toilets.

4.3.9   A range of other features were identified. Commuters and business and leisure users identified CCTV, the gap between the train and platform to be reduced, and ramps for wheelchairs. Meanwhile, business and leisure users and infrequent users all identified clear entrance and exits. Commuters and infrequent users identified general security to be important.

> *"Outwith peak times, particularly at night, I do not feel too safe, even when the train is busy. Panic buttons, guards, and CCTV would help alleviate these problems."*
>
> *"This is more important for kids, I probably wouldn't use a seatbelt but I would make my kids use one if it was there."*

4.3.10   Table 4.4 shows those features related to comfort that each user group felt were the most important.

Table 4.4 Most important features - comfort

	Commuters	Business and leisure	Infrequent users
Air conditioning/temperature control	✔	✔	✔
More legroom	✔	✔	✔
Softer seats	✔	✔	✔
Better shaped seats	✔	✔	
More comfortable seats	✔	✔	
More space	✔		✔
A specifically designed standing area	✔		
Catering		✔	
Individual seat temperature control (like on a plane)	✔		

4.3.11   Across all groups, air conditioning/temperature control, more legroom and softer seats were identified as some of the most important features:

> *"This would make me use the train more because the train is always too hot or too cold, especially if it breaks down."*

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4.3.12   Also identified by commuters and business and leisure groups were better and more comfortable shaped seats and the provision of more space.

4.3.13   Table 4.5 details the most important seating features as identified by each user group.

Table 4.5 Most important features - seating

	Commuters	Business and leisure	Infrequent users
More spacious/wider	✓	✓	✓
More seats		✓	✓
Adjustable seats	✓		
Better mix of seating types	✓		
Bigger armrests	✓		
Seats which are not so hard	✓		
Under seat luggage space	✓		

4.3.14   More spacious or wider carriages was the only feature identified as one of the most important by all three user groups. Business, leisure and infrequent rail users felt that the availability of more seats was also one of the most important features.

4.3.15   Although most commuters expected to get a seat on their journey they did not identify more seats as one of their most important features. They are, perhaps, more accepting of the fact that standing is inevitable on some journeys, or understand that more space allocated to standing can increase capacity. Alternatively, it may be that they are travelling shorter distances and therefore standing is not such a discomfort to them.

4.3.16   Table 4.6 details the most important features in relation to the toilet facilities as identified by each group.

Table 4.6 Most important features - toilets

	Commuters	Business and leisure	Infrequent users
Cleaner	✓	✓	✓
Better locking mechanism	✓	✓	
More space in toilet	✓		✓
More toilets	✓		✓
Hand dryers		✓	
Locate at the end of the train		✓	
Sanitiser		✓	

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Toilet Roll	✓

4.3.17   All of the groups identified cleanliness as one of the most important features with regard to the toilets.

4.3.18   Business and leisure and commuter groups also identified a better locking mechanism as being most important, while commuters and infrequent rail users felt that there should be more toilets per train, with more space.

> *"There should be one toilet at the end and one at the other end, at least for bigger trains."*

4.3.19   Table 4.7 outlines the other features which each user group considered to be amongst the most important features.

Table 4.7 Most important features - other

	Commuters	Business and leisure	Infrequent users
Plug sockets	✓	✓	
Wi-fi	✓	✓	
Clean windows		✓	
Digital audio messages	✓		
More luggage space			✓
More bins			✓
Music		✓	
Space for prams and wheelchairs		✓	

4.3.20   Across the groups, plug sockets and wi-fi were identified as one of the most important 'other' features by commuters, business and leisure users.

> *"I'd love wi-fi on the train, it would make the journey go faster and you would have something to do."*
>
> *"I think wi-fi would be important for businessmen but not for me, even just one carriage where you would use your phone and wi-fi – like a noisy carriage."*
>
> *"On longer trips the internet might keep you more entertained and it's always nice to have mobile phone reception."*

4.3.21   Infrequent users identified more luggage space and more bins as the only important 'other' features:

> *"There is a problem with litter and a general lack of rubbish bins on trains. This can get particularly bad towards the end of the day as more and more discarded rubbish and*

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> *food wrappings are left throughout the train.   This problem could be alleviated by providing more bins."*

4.4   Relative importance of the stock design categories

4.4.1   Overall, commuters appear to identify features in the comfort category as most important to them.   Business and leisure users identified design features as important most frequently, and for infrequent rail users, safety and comfort are the most important.   Meanwhile, cleanliness and visual announcements, including a route map which lights up to indicate journey progress and stations were the most important features for hearing-impaired interview respondents, while easy access to the train was the most important feature for those with mobility impairments.

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5   Response to Designs

5.1   Introduction

5.1.1   All groups were shown stimulus material depicting potential future/different designs. The six groups held in the Museum of Transport in Glasgow were shown around the mock-up of the new Class 380 with the response discussion held on-board the mock-up. This allowed them time to look at the features, and by spending time on-board the mock-up they could get a feel for the journey experience in the new train design. The three groups that were held in Edinburgh, however, did not have access to the mock-up.   Instead, they were shown pictures of the new Class 380, the promotional leaflet for the Class 380, and in one case, were also shown the online virtual tour.   These three groups were also shown pictures of trains currently running on the rail network in England to stimulate discussion.

5.1.2   This chapter discusses respondents' views of the design's key strengths and weaknesses, assesses how well the new designs meet the respondents' requirements/ideal train scenarios, and identifies gaps and/or further improvements they would like to see.

5.1.3   It should be noted that the mock-up of the Class 380 included the accessible toilet only. This will be the only toilet facility provided on-board a Class 380 three carriage train, however, those that will have four carriages will include a second smaller toilet. Respondents were not aware of the provision of this second toilet on-board the four carriage trains, or provided with the opportunity to comment on its size/design as it is not included as part of the mock-up. As such, comments here should not be generalised to all toilet facilities on-board the Class 380, but were specifically related to the accessible toilet only.

5.2   Strengths

5.2.1   Across all user types, many respondents felt that the tip-up seats were a "*good idea*" as they allow more flexible/good use of space, created more room for prams/wheelchairs/etc, and provided more room and space for luggage at passenger's feet.

5.2.2   Although the smaller tables were criticised by many respondents, some commuters felt the half-sized fixed tables were actually a strength as "*you don't have to climb around others to get in and out of a seat.*"   Some business and leisure users as well as the infrequent users also liked the smaller tables as they felt this allowed more space between the seats. Other business and leisure passengers also felt that the folding tables/trays on the backs of seats were a good idea, while infrequent users liked the tables that folded out of the top of some of the tip-up seats if the seats themselves were not in use.

5.2.3   All user types felt that there was now a good amount of legroom between the seats, and at all seating configurations. Commuters generally felt that the aisles were wider and that the train was more spacious and easier to move around, making it feel "*more like a European train. It makes you feel more like a customer and less like a herd of cattle.*"   Infrequent users also felt that the new design created a more spacious feeling. Some business and leisure users also stated that they liked the fact that the carriage looked to be better designed and created the impression of more space; they also felt the design incorporated increased seating capacity.

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5.2.4   Both commuters and business and leisure users felt that the train in general, and the seats in particular, were more comfortable. Some commuters with access to the mock-up said that the seats felt better designed and that the head rests were more comfortable and held the head better.

5.2.5   Both commuters and infrequent users identified that they could fit luggage under the seats, while some business and leisure users felt that the angled overhead luggage racks meant that luggage would not fall out and onto passengers.

5.2.6   Commuters liked the fact that there was more space to stand, while some business and leisure users noted the inclusion of hand holds on the back of every seat making it safer and easier to stand in the aisle and to move about the carriage.

5.2.7   Commuters felt that the larger, more spacious toilets were an improvement, while some business and leisure users also welcomed the new toilet design, "*the toilet appears to have been designed to be spacious and easy to keep clean.*"

5.2.8   The power points at seats were considered a key strength by all user types.

5.2.9   Both commuters and business and leisure users felt the inclusion of CCTV was a key strength, "*it's good from a safety point of view to have more.*"

5.2.10   Fire extinguishers are more noticeable (although some felt that this may mean that they are more likely to be misused).

5.2.11   Both commuters and business and leisure users felt that the information displays were a strength, with business and leisure users also commenting on the benefits of having the displays on the outside of the train as well as on the inside. Business and leisure users felt the outside displays were particularly helpful, "*if you are running for a train, it allows you to be sure you get on the right one.*"

5.2.12   The movable coat hooks were considered a strength by commuters and business users.

5.2.13   Commuters commented positively on the tinted windows, the on-board cupboards for wheelchair ramps, and the Braille found on the buttons at the door. Meanwhile, business and leisure users liked the panic buttons which connected to the driver, the air conditioning, and the colour scheme which they felt made it look "*bright and airy*". They also liked the areas available for wheelchairs and buggies.

5.2.14   Business and leisure users also thought that the new trains would be particularly welcomed on the Ayrshire line, pointing out that a large number of visitors will be using the trains as they fly into/out of Prestwick Airport. As such, they thought the new trains would give a good impression. The infrequent user group also felt that, overall, the new train appeared more spacious and looked better.

> "*It certainly looks a lot nicer than trains around now.*"

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5.3   Weaknesses

5.3.1   Both commuters and business and leisure users felt that there were not enough fixed or drop- down tables, and that the fixed tables provided are too small. Many described this as a "backward step" as they placed a high value on increasing the number of full sized tables as they perceive them to be more spacious and allow people to work on laptops. Commuters felt these seats would be the most popular, while business and leisure users questioned if there would be merit in providing more fold down tables so that everyone could have access to a table.

> "*I don't really see the point of the small tables, you are just going to get people fighting for them... there are so many people with laptops who are going to be stuck.*"

5.3.2   Across all user groups, the luggage racks/storage at the doors was not considered as an improvement, both in terms of location and design. Respondents feel this is still too small and needs more shelves incorporated. Some felt that more security for luggage was needed as many passengers would still have to sit with their backs to their luggage or may have to sit at the other end of the carriage. However, some respondents acknowledged that they are not any worse than existing designs.

> "*the luggage racks do not look much different so there's no improvement there.*"
>
> "*the luggage rack is still small; there could be more shelves incorporated.*"

5.3.3   Commuters felt that the lack of hand holds in some areas (especially around the doors) to allow comfortable and safe standing was a weakness. Similarly, the infrequent users group felt that the handrails on the seat backs were not large enough for passengers to grab onto.

5.3.4   Both commuters and business and leisure users commented on the lack of litter bins as a weakness.

5.3.5   The lack of wi-fi provision was seen as a weakness by some business and leisure users, whilst others felt that there were not enough seats of four, which they thought was less than ideal for people travelling in a group.

5.3.6   Commuters commented that the windows do not open, although they acknowledged that this would not be a problem as long as the air-conditioning worked.

5.3.7   Although some respondents had noted that the fire extinguishers were more visible, it was noted by commuters that the hammers for breaking the windows in an emergency were less visible than on some current stock.

5.3.8   Respondents in the business and leisure groups thought it would be difficult for a passenger to lift the baby changing table whilst holding a baby, whilst others then also commented that a wheelchair user may not be able to lift the baby changing table should it have been left down by a prior occupant[9].

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[9] It should be noted that the force required to lift the table is specified in accessibility regulations, and during the design review consultation was undertaken with DfT and disabled groups, and as such, the installation has been approved.

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5.3.9   The commuter group without access to the mock-up felt that there had been no difference/improvements made in terms of overall appearance, i.e. colours used and lighting. Meanwhile, infrequent users felt that there was still not enough wheelchair space.

5.4   Fit with ideal train/further improvements

5.4.1   Those groups that had access to the mock-up of the Class 380 were generally more positive about the new design, felt there was a better use of space, and considered it an improvement on current stock. However, those who were only provided with pictures and the online virtual tour felt there was little difference.

5.4.2   Some groups, mostly those with access to the mock-up, felt that the new design appeared to have many of the amenities/features they had identified in the ideal train they had described previously. Other respondents felt that the Class 380 design was "*getting there, but it needs a couple of minor adjustments.*"

5.4.3   Commuters felt that the new design appeared to have increased seating capacity as they required, and infrequent users felt the new design delivered the desired sense of space.

5.4.4   Although some people were critical of luggage storage at the doors, some commuters felt that the potential for luggage was greatly improved, from both the formal storage areas (i.e. at doors and overhead racks) and due to the increased space between and under seats. However, others in the infrequent user group felt that there was not as much luggage space as they would have hoped for.

5.4.5   Most respondents (both focus group and interview respondents) said they would like to see cup holders on tables in future designs. Both commuters and infrequent users indicated that they would like to see bigger fixed tables, with some infrequent users stating that there was probably potential to extend the tables.

5.4.6   Commuters would also like to see the following incorporated in the future:

- wi-fi;
- three tier shelving for luggage;
- tactile surface at doors for visually-impaired passengers;
- more toilets; and
- low-level lighting for emergencies, similar to that on aeroplanes.

5.4.7   Business and leisure users would like to see:

- power points at all seats;
- signs available in different languages;
- spring loaded baby changing table; and
- clips to hold wheelchairs in place.

5.4.8   Infrequent users also expressed a desire for individual passenger controlled air conditioning, as can be found on-board some buses and aeroplanes.

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6   Design Specifics and Priorities

6.1   Introduction

6.1.1   All respondents were asked to consider various design features in more detail. These related to the following four headings:

- accessibility;
- comfort;
- on-board facilities; and
- information.

6.1.2   Respondents were then asked to identify which features they placed a high value on and saw as a key requirement, and to consider how their priorities may change for different journey types.

6.2   Design specifics

Accessibility

Handrails

6.2.1   All commuter groups, most business and leisure groups, and interview respondents identified that the provision of handrails is important, with respondents in one focus group saying that this is particularly the case for the area around the doors.

> "*This is the most important thing, especially when there is so much standing space.*"

6.2.2   One respondent said that in general they need to be "*more solid and user friendly*" although a lot of groups felt that there are more on the Class 380 than on existing designs.

> "*A bar would be better than that flimsy handle*".

6.2.3   Meanwhile, interview respondents indicated that handles above head height were important to assist with standing when trains are crowded.

Boarding/alighting

6.2.4   Some groups, particularly the commuter groups, said that boarding and alighting the train is a problem because of the difference in height between the train and the platform; this was more of an issue for the mobility-impaired, the elderly, children, and those with prams or buggies. It was suggested that there should be an automatic ramp for use by wheelchairs (and prams and buggies), on at least some of the carriages, to replace the existing ramps which have to be manually positioned by ScotRail staff.

> "*Kids and elderly people trying to get on that – it's very dangerous.*"

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Wheelchair, prams and buggies storage

6.2.5   Nearly all groups, across all journey purposes, felt providing dedicated space for storing wheelchairs, prams and buggies, and which could also be used for cycles, is important and that the Class 380 is an improvement on existing designs. However, they still felt there was scope to provide further space (including priority seats for the disabled) which should be close to the doors.

Cycle storage (and tip-up seats)

6.2.6   Similarly cycle spaces should be provided close to doors, and there was a suggestion that being able to hang cycles somewhere would be good and would save space. The tip-up seats on the Class 380 were also identified as providing additional capacity for storing cycles:

"*The folding down seats are good, there is space for bikes if needed, if not other people can sit there*".

6.2.7   In fact, respondents felt that overall these seats were a good idea:

"*The folding chairs are good for people with prams as they can sit down with their pram.*"

Luggage

6.2.8   A number of comments were made about luggage space being important.   Interview respondents thought that there should be more space for luggage and prams as they often block aisles, luggage sits on seats and can get in the way. Meanwhile some of the groups felt that security could be improved, perhaps with lockers.

"*More luggage space would be most important if you were going a longer distance.*"

Other

6.2.9   A number of other points were made:

- there should be tactile surfaces at carriage doors for those with impairments;

- the position of the doors, at the end of each carriage, is appropriate; and

- the toilets on the Class 380 are an accessible size and the baby changing facility is "*a good idea*".

Comfort

Ability to get a seat

6.2.10   Some business and leisure respondents felt that their ability to get a seat is one of the most important factors in their journey experience.

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Seating arrangement

6.2.11   In general respondents discussed the seating arrangement of rolling stock and felt it had some bearing on their level of comfort. However, there seemed no clear consensus on which layout was best. Some prefer seats round a table and some prefer aeroplane style seats; of the latter group, some also commented that they would like a personal fold-down table.

> "*The four table seats are good; there is a lot of space.*"

6.2.12   One visually-impaired respondent felt that both the aeroplane seating and the provision of table seating are okay and generally provide enough legroom, but they prefer the seats at tables as this provides more space to accommodate guide dogs. Meanwhile, another interview respondent felt that the airline style seats should be replaced with four seats round a table, and complained that the flip down trays available at the airline style seating was "*no use as it vibrates, meaning there is the potential for tea or coffee to spill*".

Legroom

6.2.13   Many focus group and interview respondents identified legroom as being important and, to a lesser extent, the width of the aisle. The general consensus was that these are both better on newer trains and the Class 380 than existing designs.

Temperature control

6.2.14   The majority of groups, including all business and leisure groups, as well as some interview respondents identified air conditioning/temperature control as being important. Interview respondents generally felt that new trains should be less draughty, with better temperature control. They commented that the temperature on some trains currently was "*terrible*" and that they are often either too hot or too cold; in general there is a "*lack of consistency, some are drafty and even blow out cold air when it's cold*". Some focus group and interview respondents said it would be good if the temperature could be controlled by the passengers, either for the whole carriage or individually (similar to the personal air conditioning units on aeroplanes).

6.2.15   Another suggestion in the focus groups, which was echoed in the interviews, was a request for windows that can be opened. Although respondents recognised this was a potential health and safety issue/hazard, they felt it would still be nice to be able to let in some fresh air, even if it was only via a couple of windows per carriage.

Lighting

6.2.16   Although all of the user groups identified tinted windows or blinds as a good design feature, the general feeling was that it would "*be nice*" rather than essential.

6.2.17   Lighting was, however, more important to sensory-impaired respondents, who agreed that good lighting was important and should be appropriate, and that blinds should be installed on all windows. They thought there should be good lighting available to allow reading; and referred to the table lamps provided in the first class section as a facility that should be available to all passengers. Others also thought that overhead lights, similar to those available on aeroplanes should be available above each seat.

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Comfort of seats

6.2.18   The comfort of seats, including material and design, was identified by all the commuter and business and leisure groups as being important; a sentiment that was echoed in the interviews. Across all respondent types there was demand for reclinable/adjustable seats and more comfortable fabric to be used, possibly leather. Interview respondents also felt that the back height of seats is better on newer trains and that they support the head better. However, there seemed no strong feeling that seating design was a problem on the Class 380 or any other existing design:

> "*I didn't notice any difference in those seats and the seats that there are now.*"

Armrest

6.2.19   Some groups said that armrests were a useful feature, as they "*give the passenger a feeling of personal space*", and that they should be made softer and all should be foldable (including those between seats, at the aisle and against the window).

Interior décor

6.2.20   Some respondents felt interior décor is important for their comfort and that interior colours should be "*relaxing and well lit*".

Cup holders at tables

6.2.21   Respondents identified that vibrations from the train can cause drinks sitting on tables to slowly move and there becomes a danger that they can fall off the edge. It was suggested, both across the focus groups and the interviews with sensory-impaired passengers, that all tables should have some form of drinks holder, such as a hole. This is particularly useful for people with visual impairments as they might not notice drinks moving and are likely to have guide dogs sitting directly below tables (i.e. introducing a risk of scalding from hot drinks).

Other

6.2.22   A number of other points were made:

- in general, more space gives a feeling of comfort, as on the Class 380;

- a number of groups and interview respondents felt that minimal engine noise/better soundproofing is important;

- tables should be bigger (on the Class 380), while some respondents with mobility impairments said that foldable tables in general, or tables with an adjustable height, would be a positive addition;

- cleanliness was identified by some groups and interview respondents as having a bearing on comfort. Some felt that the trains should be cleaned more often, possibly by having cleaners travel on-board; and

- overhead luggage storage was seen as being important to some of the groups, and could incorporate a lid similar to aeroplanes.

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On-board facilities

Power sockets, wi-fi and mobile phone coverage

6.2.23   There was widespread feeling amongst nearly all the different groups, including all the commuter groups and many of the interview participants, that more power sockets would be useful. However, this was not considered to be one of the most important features.

> "*That would be handy if you wanted to use it, but not essential.*"

6.2.24   Similarly, internet/wi-fi access was seen as a key design feature for most focus group and many interview respondents, with mobile phone coverage also identified by some of the respondents:

> "*It means you could make a phone call without having to re-dial two or three times when you go through a tunnel.*"

Litter bins

6.2.25   Many respondents felt there should be more bins and these should be bigger, although there was acknowledgement that this takes up space.

6.2.26   Some interview respondents also thought that more bins should be provided on-board. They noted that bins used to be located between seats but thought that many newer trains did not provide bins. They thought that bins were useful and can lead to trains being tidier, and suggested that perhaps they could be located at the ends of each carriage and one in the middle between the seats. One respondent indicated, however, that passengers also had to be educated to use the bins provided in order to keep the trains cleaner.

Toilets

6.2.27   Toilets are important to most of the respondents and most felt that those in the Class 380 were good. Features which were identified as being desirable were: dryers rather than tissues, sanitiser, baby changing table/facilities which can be easily cleaned, and more handrails.

Other

6.2.28   A number of other points, which were seen as elements that would be nice to have rather than key features, were made by both focus group and interview respondents:

- CCTV;
- inclusion of some means of contacting the driver/member of train staff at the ends of each carriage;
- coat hooks/hangers;
- catering trolley and/or vending machines provided on longer journeys; and
- TVs showing, for example, BBC News.

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Information

LCD displays

6.2.29   Some groups said they felt that LCD displays are a good feature, should be included in rolling stock, and should display more information than they currently do. This was particularly the case for business and leisure users. Many felt that the actual information provided could be expanded to include Real Time Information (RTI) covering issues such as delays and estimated time of arrival (ETA). Some felt that the display screens should be bigger.

Audio messages

6.2.30   A number of commuters and business and leisure users agreed that RTI and ETA should also be relayed in audio format, and that the preferred format is digital, rather than from the driver speaking.

6.2.31   It was also identified by some groups that audio messages should also relay all information available via LCDs, including RTI, ETA and delay information.

> "*This would be really useful if someone was partially sighted, they would be told what the next stop was, etc.*"
>
> "*There should be an announcement each time you approach a station, and it should come up on the screens so it is suitable for everyone to hear or see.*"

Route maps

6.2.32   A number of groups, particularly business and leisure users, felt that it would be useful if trains contained route maps, perhaps via a screen, as this would allow people to know when their stop is coming up. There was even a suggestion that these could be "*digital and interactive*" like, for example, Google Maps.

> "*It would stop passengers getting off at the wrong stop, like visitors or tourists, and make you feel more comfortable if you know where you are going.*"

Information on carriage exterior

6.2.33   All focus groups and interview respondents felt that signs on both the front and sides of the train displaying information like the destination, departure time and carriage number are good.

Safety signage

6.2.34   Some groups felt that there should be more information signs highlighting that CCTV is recording and indicating where fire extinguishers and emergency hammers are located.

Reserved seats

6.2.35   Another issue raised by business and leisure users was that it can be difficult to find reserved seats and many felt there must be a better way of displaying this kind of information.

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6.3   Design priorities

Most valued elements

6.3.1   Groups were asked what their most important design priorities were and the most commonly identified for the commuter and business and leisure users are shown in Table 6.1.

Table 6.1 Design priorities – most valuable

Commuters	Business and leisure
Boarding and alighting the train (reducing the gap between the train and the platform)	Aisle width and legroom
Handrails (for moving around the carriage or for people who cannot get a seat)	Temperature control (including air conditioning)
The comfort of seats (including material, backs and headrests)	The comfort of seats (including material, backs and headrests)

Priorities for different journeys

6.3.2   Respondents were asked how their key requirements might change if they used the train for different types of journey, or if they boarded at different stations. They were also encouraged to discuss whether they would be more likely to use the train for other journey purposes if the features they had identified were incorporated into the design.

6.3.3   Some commuters said that they may be more likely to use the train at the weekends for leisure trips if trains incorporated their key features. Other respondents disagreed however, indicating that ticket price was the most important factor when deciding whether to use the train, but said that the improvements identified would make their existing trips better.

6.3.4   Commuters said their needs would be different for longer journeys and that the following would become more important: better, bigger and lockable luggage racks; tinted windows/blinds; and their ability to get a seat.

6.3.5   Some business and leisure users said they thought they might use the train more often, and for other purposes more, if the identified changes were incorporated. Most people in the group agreed that it would make the journey more pleasant.

6.3.6   Other business and leisure users said if they were travelling further afield they would want a table and a more comfortable chair, and that the lighting and design would also have to be better if they were going to be on the train for a greater period of time. However, they also indicated that they would probably have less luggage if they were using the train for commuting, and therefore luggage space would be less important to them in this instance.

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Main requirements

6.3.7   It was explained to the groups that due to budget and space constraints it might not be possible to accommodate all of the features they had identified. They were asked which aspects were their main requirements and which would just be nice to have.

6.3.8   Some business and leisure users agreed that comfort was the most important aspect of travel and said it would be acceptable to trade luggage space for more legroom, but not to trade legroom for additional wheelchair spaces.

6.3.9   Some respondents felt there should be different train designs for shorter and longer journeys.

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7   Passengers Requiring Specific Facilities

7.1   Introduction

7.1.1   In addition to the nine focus groups discussed in the previous chapters, a total of six depth interviews were also undertaken with passengers with mobility and sensory impairments. These respondents were recruited via support organisations, including:

- Scottish Guide Dogs for the Blind;

- Scottish Council on Deafness;

- Scottish Disability Equality Forum, including;

  - Fife Independent Disability Network; and

  - North Ayrshire Access Forum.

7.1.2   As many of the features identified by these respondents were similar to those already discussed in the previous chapters, this information has been included throughout the relevant earlier sections. This chapter, therefore, outlines where passengers with mobility or sensory impairments requirements differ, or where they have additional needs from those already covered. It should be noted, however, that given the limited number of interviews conducted, the results should be treated as indicative only; this does not provide a full exploration of impairment needs.

7.1.3   Since 1998, rail vehicles have been regulated in their design for accessibility under the Rail Vehicle Accessibility Regulations 1998 (RVAR). These have since been superseded by the Technical Specification for Interoperability for Persons with Reduced Mobility (TSI-PRM), which came into force on 1st July 2008. The Class 380 are the first rail vehicles in Europe to comply with this European legislation. Despite the fact that current stock meets the regulation requirements, many respondents indicated areas where further improvements could be made and where they felt it possible/important for design to go above and beyond the minimum requirements set.

7.2   Range of additional facilities required

7.2.1   The range of additional facilities that respondents with mobility and/or sensory impairments require in order to travel by train is wide and varied. They include:

- accessing the train – depending upon passengers impairments, this will include a smaller gap between the platform and train, a ramp to board the train, and/or highly visible doors and buttons;

- consistency in terms of location of the button to open the door;

- Braille marking on door entry buttons;

- finding a seat, ideally well signed priority seating – and in the case of those with guide dogs, priority seats should have additional legroom to accommodate the dog;

- provision for wheelchair users to be able to sit next to a companion (not opposite them);

- foldable armrests to help those with mobility impairments to get out of their seat;

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- both audio and visual announcements that are clear, always work, and provide consistent and comprehensive information (e.g. where the next stop is);

- high contrasting colours on-board (e.g. light colours against dark colours), including doors, handrails, poles, etc in contrasting colours that stand out;

- adequate lighting;

- easy to lock toilets, with standard location of buttons to control the door/lock. They should also be large enough to easily accommodate a wheelchair and a guide dog or a carer;

- easy to access catering facilities;

- ease of finding a member of train staff and the ability to communicate effectively with them; and

- adequate space for guide dogs.

7.3   Perceptions of current rolling stock

Accessibility

7.3.1   The lack of space for wheelchair users and guide dogs on-board/at seats was highlighted as an issue on current rolling stock. Having dedicated space for wheelchairs was seen as "*ideal*" by some respondents, however, others pointed out that, as there is often only one space for a wheelchair user per train, this space has to be pre-booked in advance of the journey. Many felt there should be more space dedicated for wheelchairs, particularly as the existing spaces are often used for storing prams or luggage.

7.3.2   Access to board the train for wheelchair users was also highlighted as an issue. They felt that the availability of ramps is not always good, and often this needs to be booked in advance meaning that passengers with mobility impairments have no other option but to plan ahead. One respondent described a system where there could be a designated carriage for the mobility-impaired which had a ramp fitted under the door that could be pulled out when required, and thinks that this may be a better system.

7.3.3   Some respondents said that the current system, where wheelchair users have to book a journey 24 hours in advance, is inconvenient[10]. They also said that it was not uncommon for information not to be passed on effectively to station staff so that when they turn up to travel they are not expecting them. If carriages could be designed to be more easily accessible, perhaps using integrated ramps, this would mitigate against both the need to book, and the risk of bookings not being confirmed with stations.

7.3.4   Although one respondent felt that the automatic doors are much better than the way you used to have to roll the window down and open the door from the outside, another respondent felt that the doors don't stay open long enough to allow passengers with guide dogs to disembark. They also felt that there were not enough grab rails/handles on-board, and that the aisles were too narrow to accommodate wheelchairs, meaning that once a

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[10] Passenger Focus (2008) "Assisted Passenger Reservation Service: Mystery Shop" provides more information and opinions on booking requirements for disabled passengers.

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wheelchair user was in the allocated space they were unable to move to access the catering, etc.

7.3.5   Visually-impaired respondents also complained about the lack of consistency in the location of the door entry buttons, and one outlined how this makes accessing trains difficult for those with visual impairments:

> "*When trying to access vehicles I have great difficulty as I cannot identify the button to open the door. When feeling about for the button I have had the frightening situation of the train moving away while my hand was still on the carriage and leaving me standing on the platform. Depending on the style of train being used on a particular service, the door opening button may be either on the right, left or middle of the door as you try to board.*"

7.3.6   They added:

> "*Currently the driver from the cab can press a button to shut all doors and arm them so that they cannot be opened while the train is in motion. They cannot, however, press a button to open any or all doors.*"

7.3.7   One respondent with a mobility impairment said that it can be difficult to gain access to priority seating, particularly during peak periods, because other passengers have already taken them. Although dependent on passenger behaviour, the respondent also felt that there could be more priority seating with more visible signage.

7.3.8   The same respondent said that the aircraft-style seats, and to a lesser extent the seats facing each other with a table, were difficult for people with mobility impairments to get in and out of. Their preference would be for seats which face each other and have no table, or a small table under the window.

Comfort

7.3.9   One visually-impaired respondent stated that there are a lot of trains without armrests now. However, armrests can assist disabled people to get in/out of seats, especially if they can be folded up and down.

7.3.10   One wheelchair passenger also stated that the location of the wheelchair spaces often meant that their journey could be uncomfortable:

> "*wheelchair passengers being continually struck with luggage by other passengers entering and leaving the train.*"

> "*As they are placed directly outside the toilet door they have to endure some unsavoury odours from the toilets especially in the summer months.*"

7.3.11   Further, they said that because of where they are situated in the carriage wheelchair users are often "*verbally abused by drunks queuing up for the toilets*".

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On-board facilities

7.3.12   Despite being compliant with current disability regulations, respondents with mobility impairments felt that the toilets were not accessible enough. They felt they still required more space in order to manoeuvre a wheelchair and accommodate a carer. Further, those with visual impairments also felt that the toilets were not large enough to accommodate guide dogs.

> *"Toilet facilities on older trains are too small and cannot accommodate guide dogs."*
>
> *"Toilets are too narrow to be accessed by wheelchair; they are more accessible on the [newer trains]."*

7.3.13   Although interview respondents generally preferred the larger toilet cubicles, a few expressed that they were not particularly keen on the doors that lock by pressing a button and would prefer to be able to lock the door manually. Personal safety was cited as the main reason for favouring the manual locking system; however, one visually-impaired respondent also highlighted how difficult it was for people with sight problems to locate the electronic button to close/lock the doors as this is often on the wall opposite/away from the door[11].

7.3.14   A lack of tables was identified as a problem for those with a hearing impairment. British Sign Language users like to sit directly across from one another so that they can communicate easily, yet where only airline style seats are available it is not possible for them to do this with ease.

7.3.15   One respondent said that a problem for wheelchair users was:

> *"Being unable to communicate with their travelling companions due to the nearest seats to the wheelchair placement facing away from the disabled passenger… in many instances their travelling companions may be in a completely different carriage."*

Information

7.3.16   Communication with train staff was also cited as an issue by respondents with a hearing impairment, because they are not aware of sign language:

> *"There needs to be more deaf awareness amongst train staff, including conductors and those that provide the catering."*

Meeting specific requirements

7.3.17   Respondents were asked if they felt that their additional requirements were met by the design and facilities currently on-board trains. A few respondents stated that their requirements are not met when the electronic displays are not working. They also felt that much better use should be made of the type of electronic information displayed. Emergency information should be displayed so that if there is a problem on the service, it appears on the electronic display.

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[11] It should be noted that the use of electronic buttons are fully compliant with the current regulations, and the location of these buttons on the wall opposite the door is currently seen as best practice by these regulations.

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> *"Quite often passengers are asked (by audio announcement) to get off the train and move to another one and deaf people have to rely on people's body language to detect when something is wrong."*

7.3.18   Issues over safety were also cited by one of the respondents with a hearing impairment as a problem because there is no indication that the fire alarm is going off for people that are deaf. They feel that there should be some form of flashing light to indicate that the fire alarm is going off, because if they were on their own in a carriage they would obviously not be able to rely on what other people were doing and would have no idea that there was an emergency.

7.4   Lessons from other TOC's and other modes of transport

Other Train Operating Companies

7.4.1   One hearing-impaired respondent indicated that they had been particularly impressed when they had been abroad and been able to buy one ticket that allows passengers to travel on various modes of transport (e.g. a day ticket that allowed travel on-board trains, buses and the subway) rather than having to buy tickets for each separate stage of the journey. They explained that this would make things a lot easier for people with hearing difficulties as they would not have to repeatedly go through the difficulties of communicating with staff to purchase different tickets.

7.4.2   The other hearing-impaired respondent had been impressed by trains abroad where an electronic map had been displayed with lights on it to represent each stop, these lit up to show which stop the train was at. They felt this would be beneficial for Scottish stock to assist hearing-impaired passengers who cannot hear next stop announcements. They also felt that the visual information in general, provided on-board trains abroad is "*far superior*" to that provided in the UK.

7.4.3   Visually-impaired respondents preferred the designs where the table is supported by the wall rather than those with the table leg, as this provides more legroom and space for guide dogs.

7.4.4   Some trains now have wider access from the entrance to the carriages to the seating areas (about 1.5 times bigger than), which was identified as being better for wheelchair users.

Other modes of transport

7.4.5   One visually-impaired respondent identified the following elements on-board buses which could be incorporated into trains:

- the audio/visual announcements on London buses is good;

- the colour contrast schemes used on buses is good (particularly in London); and

- the hanging straps on buses are good and could easily be incorporated into trains.

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7.5   Key requirements

7.5.1   Some respondents were unable to identify only a few key requirements and indicated that they considered all those mentioned so far to be equally important to them.

7.5.2   However, for the mobility-impaired respondents, their key requirement was ease of gaining access to the train, and having staff on-board to assist them if required. Meanwhile, one of the hearing-impaired respondents listed the following factors as their key requirements:

- clear electronic information;

- being able to sit directly opposite the people they are travelling with to allow them to communicate via sign language;

- adequate luggage space in a place near their seat where they can keep an eye on it.

7.5.3   The visually-impaired respondents identified the following features as key requirements in order of importance:

- audio/visual announcements (so a person knows when they are at their station);

- entrances – situating of doors so the gap between trains and platform is minimised (the respondent knows that some guide dogs have fallen into the space between the train and the platform);

- legroom (to allow a guide dog to sit with them); and

- movable armrests (to help them get in and out of seats).

7.6   Key areas for improvement

7.6.1   Visually-impaired respondents stated that they need good audio announcements that work, and that these should include the provision of information when the train has broken down or is delayed. They also suggested that there could be an audio sound to let people know where the door is on the train, and that safety information should also be provided in large print and Braille to make them DDA compliant; the print on leaflets/signage provided on trains is often too small for some people to read. Colour contrast, to make features more visible to those with poor vision, was also suggested. Extra legroom at all seat configurations would also be beneficial for those who travel with guide dogs to allow them to sit at their feet. Armrests that are movable would also be considered as an improvement, as would more handrails, preferably a continuous bar running along the carriage, in contrasting colours. An audio sound for the toilet door shutting and a manual lock were also mentioned, as was extending the time taken for the door to close to allow people with guide dogs the time needed to get on/off.

7.6.2   The key improvements for those with mobility impairments were centred on access, in particular, having someone ready with a ramp for boarding the train, and not having to book this 24 hours in advance; they would like the freedom to travel in the same way as everyone else and appreciate the ability to make spontaneous journeys. They also indicated that the aisle widths are restrictive - they are able to get into the spaces allocated to wheelchairs, but they cannot go anywhere else once on-board the train.

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7.6.3   Disabled respondents using the Ayr/Glasgow line felt that a key area for improvement would be the provision of more space for storing luggage. They felt this was particularly important for the Ayrshire line as there are a lot of people travelling to Prestwick (Prestwick Airport) and Ardrossan (to get the ferry to Arran) who carry luggage with them. They said that often luggage is left in wheelchair spaces or blocks aisles.

7.6.4   One respondent with mobility impairments said that the key area for improvement should be making it clearer which seats are priority seats for passengers with disabilities. They felt this should be done both inside and outside the carriage so passengers can tell before they board the train. They suggested that there could be a designated area for disabled seats which is clearer marked by better signage and/or different coloured seats.

7.7   Ideal train

7.7.1   Generally, the main factors that both **hearing-impaired** respondents identified as key elements of their ideal train were similar to those discussed in the focus groups (and therefore covered in Chapter 4). Those particular requirements that differed however, included:

- polite and smartly dressed staff on-board that are deaf aware/that hearing-impaired passengers are able to communicate with; and

- visual information, including a map that lights up to show where you are on the route and which station you are approaching.

7.7.2   Factors that **visually-impaired** respondents identified as key on their ideal train included:

- good audio announcements, including information when the train is delayed/broken down;

- an audio sound to let people know where the doors are;

- movable armrests;

- ample legroom to accommodate guide dogs;

- safety information provided in both large print and Braille;

- Braille marking on door entry buttons;

- contrasting colours used for doors, entry/exit buttons, handrails, etc;

- all seats would be at windows and none at pillars between windows as some visually-impaired people can see better in natural daylight;

- all windows would have window blinds, as a strobe effect can occur with the train movement and the sun for partially sighted passengers;

- ensure that the train has exceptionally good lighting as someone with just some useful vision can benefit from this; and

- improved accessibility, e.g. ramps that pull out from under the doors rather than portable ramps;

- have on-board staff that enforce the priority/disabled seating.

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7.7.3   The **mobility-impaired** respondents requirements for an ideal train were related to accessibility issues, in terms of having easy access to the train and not having to book in advance so that they can make spontaneous journeys. Some respondents said that the ideal scenario would be to have an automatic ramp which they could operate themselves for accessing trains, rather relying on a manual ramp and train/station staff. It was suggested that this could be operated by a button or even by a radar key.

7.7.4   Another common request was for there to be a bit more space on-board in order to be able to move about the train more.

Most important features

7.7.5   Similar to the focus group respondents, the most important elements for both hearing-impaired respondents were that the train would be clean. One also mentioned that the train should be comfortable, while the other included the route/station map that lights up among their most important features.

7.7.6   The visually-impaired respondents were unable to identify only a few features that they considered as most important, indicating that they required all the facilities they had mentioned. Meanwhile, the mobility-impaired respondents stated their main requirement was related to accessing the train, and that as this was currently not well provided for, other factors were much less important to them at this time.

7.7.7   A train which incorporated all of their ideal features would encourage both hearing-impaired respondents to travel by train more often, while the visually-impaired respondents said that incorporating their main features would make him happier and less stressed when travelling.

> "*I am always wary of my dog getting stressed out, if my dog is stressed out he will not work properly, and my life depends upon my dog working properly. If I go on a train that is overcrowded and I can't get into a disabled seat where my dog can be comfortable and not stressed. If he is stressed out then I am stressed out, because I am worried sick that when I get to my destination, is he going to get me across the first road we come to or am I going to get run down by a car because my dog has been stressed out because of an ill thought out train.*"

7.8   Future design specifics

Accessibility

7.8.1   Consistency of design was important to many groups, so that the facilities and information is always in the same place regardless of the train/route, i.e. the doors, toilets, the buttons to control doors, etc.

> "*If you are blind or partially sighted, to get on any rail service and know that they are going to be all the same makes life considerably easier.*"

7.8.2   All groups also stated that greater consideration needed to be given to the needs of wheelchair users regarding the accessibility both to board/alight trains, and once on-board.

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7.8.3   Mobility-impaired respondents would like to have easy access to the train and not have to book in advance. They would also like to see more than one disabled area per train, but felt that tip-up seats could be incorporated so that these areas could still be used by other passengers when not in use by wheelchair users. Also, as not all stations are manned, on-board staff are required on all trains, and they need to be ready with the portable ramp to allow wheelchair users to board/alight. They also felt that the disabled toilets on-board trains are largely suitable, but would benefit from the provision of a little more space:

> "*Disabled toilets on the train are just about adequate, getting in and closing the door is okay but not always the easiest. A bit more room to manoeuvre would be ideal.*"

7.8.4   A mobility-impaired respondent acknowledged that this study was not concerned with stations, but felt it was important to highlight that some stations are only accessible for trains travelling in one direction; they only have stairs to access other platforms, with no options for lifts/ramps, meaning they are not accessible for mobility-impaired users. They also felt that the timescale set to change this is "*far too long*".

7.8.5   Other mobility-impaired respondents said that foldable armrests are useful to them for getting into and out of seats.

7.8.6   One respondent said that often trains did not stop for long enough for people with mobility impairments to get off at their stop. They suggested there should be a button located at doors which could be pressed to alert the driver that they should stop for longer. Another felt that people standing on-board at the doors can make it difficult for them to get on and there may be scope to accommodate standing passengers elsewhere, away from the doors.

7.8.7   One visually-impaired respondent said:

> "*Another problem I have encountered is when I think I have found an open door and gone to step in, only to find it is the open space between two carriages. This would have resulted in my falling between the train and platform edge. What chance would I have then, if the driver cannot see me standing upright on the platform trying to find the button - absolutely none! To prevent this from happening, some operators e.g. London underground have fitted stock with plastic panels covering this area between carriages and this should be considered.*"

7.8.8   In relation to accessing the train, the respondent continued:

> "*What is required is a system whereby the blind person has a small hand held apparatus, which say by a short distance radio frequency basis, a signal is conveyed from the nearest door to the blind person and the door would automatically open. Thereafter the blind person could run either their hand or cane along the outside of the carriage until they find the open door and then board.*"

7.8.9   They said they are aware of some trains that omit an audible signal but it does not open the door nor address their problem. Therefore, in addition to audible signals, radio frequencies, automatic doors, etc, consistency in design, particularly with the location of doors and entry buttons, both of which should be in high visibility contrasting colours, would be helpful.

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7.8.10   Other visually-impaired respondents noted that, in terms of accessibility to board/alight the train, some platforms can be curved meaning that the gap at the doors varies. They felt that if the doors are located at the end of the carriages this would ensure that the gap is as small as possible.

7.8.11   Both mobility and sensory-impaired respondents also felt that future design should incorporate more priority seating, which should be easily located near the doors, that these seats should have extra legroom to accommodate a guide dog, that they should be in a contrasting colour to the rest of the interior décor as well as a different colour to the rest of the seats, and that they are clearly labelled (including tactile indicators to allow visually-impaired passengers to locate them) as priority seats. They also stated that better handling of reserved priority seating was required; one respondent had experience of pre-booking priority seating on-board trains, but finding that people were sitting in them. In most cases train staff will move them (or the respondent themselves will ask them to move), but they felt that an LCD seat reservation display may help. One mobility-impaired respondent also described an option similar to that used currently by supermarkets for disabled parking bays, (i.e. whereby audio messages are activate by cars that do not have a blue-badge):

> "*the vast majority of valid users will be carrying a national entitlement card and its machine readable smart chip will indicate that the person in the seat is entitled. If the seat is used by "Joe Public" a light or similar could indicate the seat is available and an audio reminder could indicate/remind that person they should give up the seat if requested at the point of them sitting down.*"

Comfort

7.8.12   Generally, comfort-related design specifics identified by both mobility and sensory-impaired respondents were consistent with those identified in the focus groups, and have, therefore, been outlined in Chapter 6. In summary, these included:

- better temperature control;

- good lighting, with blinds installed on all windows;

- adjustable/reclining seats with higher seat backs and more comfortable material, such as leather;

- no clear agreement of seating configuration, however seats at tables provide better accommodation for guide dogs;

- foldable tables or tables with adjustable height;

- better soundproofing;

- inclusion of some means to contact the train driver/ staff.

7.8.13   The only additional facility discussed under comfort, was to install an alarm system in the toilets.

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On-board facilities

7.8.14   Similarly to comfort based issues, many of the on-board facilities discussed by mobility and sensory-impaired respondents echoed those discussed by focus group respondents and have, therefore, been outlined in Chapter 6. In summary, these issues included:

- power sockets;
- wi-fi;
- more bins;
- more luggage space;
- drinks holders at all tables;
- coat hooks;
- catering trolleys on all longer journeys; and
- that trains are cleaned more often.

7.8.15   A few additional on-board facilities were also outlined by respondents with mobility and sensory impairments.

7.8.16   One hearing-impaired respondent also thought there should be a visual display to warn people using the toilets if there is a problem on-board, or if there has been an emergency and the train has had to stop. They felt that these messages should also be displayed on electronic message boards throughout the carriages.

7.8.17   One visually-impaired respondent also felt that the toilets needed to be designed so that they are big enough to accommodate a guide dog, and that every toilet on-board trains should be a disabled toilet. One mobility-impaired respondent also indicated that the disabled toilets would benefit from incorporating a little more space to allow people in wheelchairs to manoeuvre. It was also considered important that the toilets were consistent in all trains in terms of location, design, position of buttons for doors, etc and that they should use contrasting colours to aide visually-impaired passengers. A number of respondents stated that they do not like the push button locks on toilets and would rather that manual locks were used.

7.8.18   Other future design features stated by one or other visually-impaired respondents included:

- indicators that glass is present on the train, e.g. for glass doors; and
- tactile indicators.

Information

7.8.19   Due to sound quality and problems with echoing and background noise in the carriage, those with hearing impairments often find it difficult to hear the audio announcements. They suggested a system where earphones could be plugged into the priority seating to allow them to hear the announcements, and also a loop system could be implemented to assist those with hearing aids.

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7.8.20   As they are often unable to hear the audio announcements, visual displays were also required by hearing-impaired respondents, and it was felt that these should include information about the next station, destination, delays, cancellations, etc. One respondent felt that, where they are provided, the current visual displays are well located. However, they would like to see them on all trains, and for them to be working at all times as they are really important and helps to reassure hearing-impaired passengers that they are on the correct train.

7.8.21   Meanwhile, audio announcements regarding next station, destination, delays, cancellations, etc were considered paramount for those with visual impairments. It was felt that these should be consistent, with no significant variations between services, and if train staff provide these rather than an automated system, staff should be concise and not embellish the announcement.

7.8.22   In terms of passenger safety, visually-impaired respondents felt that this information should be made available in different formats, such as large print and Braille, and while they acknowledged that this may not be possible on-board every carriage, they thought that copies should be available from staff.

7.8.23   Those respondents with visual impairments also thought there should be information provided on the side of the trains and that this should be highly visible and provided in large print, they also wondered if this could also be provided in Braille. Also, they noted that some trains have the carriage numbers displayed in large font when moving between the carriages, they thought this was a good idea and should be incorporated into more stock.

7.8.24   The colour coding of doors, in contrasting colours to the rest of the internal design was also considered to be a key feature of future design for visually-impaired passengers, as was the provision of signage in contrasting colours.

7.8.25   One visually-impaired respondent thought that seat reservations should be via tickets only, not using electronic displays as these can often cause problems when they are not correct or not working. The other, however, thought that large print signs could be available above seats to help people find reserved seats.

7.8.26   One mobility-impaired respondent felt that there should be a visible sign at priority seats saying "*If you sit in these seats you should be in possession of an Entitlement Card*" and then include a picture of the card. They suggested that these seats could even be a different colour from other seats in the carriage to make them stand out.

Design priorities

7.8.27   The most valued aspects for the visually-impaired respondents included:

- audio announcements, providing consistent and comprehensive information;
- consistency in design so doors, control buttons, etc are always in the same place;
- priority seating with extra legroom;
- high visibility doors and buttons;
- information provided in accessible formats, and using contrasting colours for on-board information;

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- manually locking accessible toilets; and

- being able to negotiate the step/gap between the platform and the train.

7.8.28   One stressed the importance of timely provision of information for visually-impaired passengers, particularly those travelling with a guide dog as they have more to consider than just themselves. For example, they highlighted the paramount importance of receiving announcements of delays as these will undoubtedly affect the dog, e.g. toilet requirements for the dog should there be a long delay, and if they can alight at an earlier stop this may be preferable to being stuck between stations.

7.8.29   The most important features for hearing-impaired respondents was the provision of information, both via an alternative system such as headphones and a loop system, and visual information displays. Information required included next stop, final destination, and information about delays and cancellations. They also expressed concern about on-board staff being removed from services as this will further reduce hearing-impaired passengers communication channels, and expressed that good lighting was also important to them.

7.8.30   For the mobility-impaired respondents, the most valued aspects overall are:

- accessibility, both to board/alight the train and move around once on-board;

- for there to be on-board staff on all trains to assist any mobility-impaired passenger, and to be ready with the portable ramp so that wheelchair users can board/alight at unmanned stations;

- alternatively, to have some sort of integrated automatic ramp which they can operate themselves;

- to have more space for wheelchairs, and also more space for prams so that they do not use wheelchair spaces;

- more clearly identifiable priority seating;

- a continuous handrail running the length of the carriage, for example on the overhead luggage rack;

- wider doors;

- to be able to use a train without having to provide 24 hours notice;

- to provide adequate space for luggage so that it is not stored in wheelchair spaces or where it blocks aisles;

- to have access to large enough disabled toilets that allow for wheelchair users to manoeuvre and/or to accommodate a carer; and

- to have seating that is easily transferable onto so that someone does not need to sit in their wheelchair.

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7.8.31   One visually-impaired respondent stated that all aspects they had discussed in the interview were very important, some of which were simple things that could be implemented quickly and with little cost to the operating company. The other stated that if the features they had identified were incorporated into future train design, they would be more likely to use the train more often. They said it would make them feel "*more comfortable and more confident*" and that people with visual impairments "*need to feel safe*". Overall, it would just be a better environment to travel in and "*subtle differences within the environment can make all the difference.*"

7.9   Complementary vs conflicting requirements

7.9.1   Some of the requirements identified by passengers with sensory or mobility impairments are similar to those of the general public, while others would result in conflicting priorities.

7.9.2   Common features, or features that would not lead to conflicting priorities include:

Accessibility

- improving access to the train by reducing the gap between train and platform or having an alternative type of ramp (perhaps with a radar key);

- a fob, emitting a short distance radio signal, which would open train doors for people with visual impairments;

- no space between the carriages, which could be confused with a carriage door by people with visual impairments;

- keeping doors open for longer at stations;

- large, accessible toilets (to accommodate wheelchair, guide dog or carer) with manual locking doors rather than automatic ones controlled by buttons;

- wider aisles;

- a continuous handrail running along the length of the carriage; and

- tactile markings at priority seats.

Comfort

- foldable armrests;

- more legroom at seats to provide adequate space for guide dogs at seats (complements other passengers desire for more legroom);

- more seats that face each other with a table in between so that people with hearing impairments can sit opposite each other, these are also typically preferred by other users;

- table supported at the wall rather than from the floor (allow more legroom and space for guide dogs to lie); and

- reclining seats which support the head, with a suggestion that leather is the preferred material.

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On-board facilities

- easy access to catering facilities;

- blinds on all windows;

- alarm system in the toilets and a visual display in the toilets to provide information;

- a means of contacting the driver at the ends of each carriage;

- power sockets and wi-fi;

- more bins;

- drink holding feature on tables; and

- coat hooks.

Information

- accurate and clear audio and visual announcements (including an announcement telling people to keep priority seats free and advising which side of the train the platform in the next station is on);

- a system where earphones could be plugged in at priority seating to allow people to hear announcements;

- audible sounds to let people know where doors are;

- route maps; and

- large font size and Braille for all signs and buttons (including door entry buttons).

Other

- consistency of design (including locations of all buttons etc);

- provision for wheelchair users to sit beside a companion;

- high contrasting colours on-board to highlight key features and good lighting; and

- better soundproofing.

7.9.3   Those features where conflicting priorities may need to be considered however, include the following:

- more clearly marked priority seating and more of it, which may reduce capacity for other passengers;

- more than one space for wheelchairs per carriage, which may be at the expense of standard seating;

- smaller tables at seats which face each other make it easier for passengers with mobility impairments to get in and out of. However, many other respondents felt tables should actually be bigger, for example, to accommodate laptops;

- more space for storing luggage in order to keep aisles free; this may be at the expense of seating for other passengers;

- wider aisles to make it easier for wheelchair users to move around, which may be at the expense of seats for other passengers; and

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■   trains should stop for longer at stations to allow those with mobility impairments to board/alight and there should be a button to alert the driver that more time is needed. This could increase journey times.

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8 Conclusion

8.1 Key differences

8.1.1 Key requirements and design priorities appear to be fairly similar between business and leisure users. The only difference in needs was a slightly higher prevalence of business users indicating that they would like to have free wi-fi, power sockets, tables that allow them to work on laptops, good mobile phone coverage, and coat hooks. However, leisure users also stated that they would value these facilities as well when travelling, albeit, that they perhaps place a lower value on these compared to business users.

8.1.2 Time of travel (i.e. peak/off-peak) appears to have slightly more of an impact on requirements than purpose. Those that travelled in peak periods were more likely to identify capacity issues, the necessity for luggage space (as this can compete with standing space), and the need for handrails/holds for safe standing. Meanwhile, those who travelled during the off-peak periods were more likely to expect a comfortable seat, and prefer tables and have the ability to use a laptop.

8.1.3 Some differences were prevalent between the different routes used by respondents. Mainly, those using the Ayr/Glasgow line noted capacity problems, therefore making suitable and safe standing areas more of a requirement. They also noted that as this line connects with Prestwick Airport, the capacity issues are often exacerbated by passengers' need to travel with bulky luggage, therefore making suitable and secure storage areas more of a priority on this line.

8.1.4 Also, those travelling between Edinburgh and Glasgow were more likely to place a higher priority on the prevalence of full-sized tables, and felt that the reduction of these on the Class 380 mock-up was a weakness. This is likely to be because the current stock provided on both Edinburgh/Glasgow lines provides a larger number of tables then available on the Class 380 and they would expect this to continue on these lines.

Comparison with English rolling stock research

8.1.5 A review of previous research by Passenger Focus into the Thameslink Rolling Stock[12] shows that the results of this research are largely similar to the design requests of those passengers using the Thameslink route. Respondents in both research projects were largely concerned with the ability to get a seat, comfort of seating, ease/safety of boarding/alighting the train, safety of standing areas, provision and safety of adequate luggage space, on-board temperature, the provision of on-board information/announcements, and general cleanliness.

8.1.6 The respondents in this research however, exhibited an increased expectation that they would always be able to get a seat on-board, whereas those using the Thameslink route were more likely to be resigned to the inevitability of having to stand at certain times of the day/for certain journeys. Therefore, while handrails/grab handles on seats, tip-up seats, etc were important to Scottish respondents, they were perhaps not given as high a priority as

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[12] Outlook Research (2008) "*Thameslink Rolling Stock Qualitative Research*". Prepared for Passenger Focus, in a joint project with the Department for Transport and London TravelWatch.

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those in/around London, who also identified additional features to aide standing such as flip-up and perch seats which were not discussed in Scotland at all.

8.1.7   In addition, Scottish respondents appear to place a higher priority on the availability of a table at seats, compared to those on the Thameslink route. Many Scottish respondents indicated this increased the legroom and personal space available, and therefore enhanced their journey comfort, whilst also being important to allow passengers to work on laptops, and to accommodate guide dogs. Meanwhile, Thameslink passengers felt that tables took up too much space which would be better utilised by maximising the number of seats that could be accommodated per carriage.

8.1.8   Similar priorities for passengers with mobility and sensory impairments were also identified in both pieces of research. Ease of access to the carriage was paramount to all mobility and sensory-impaired passengers, particularly removing the need to book in advance for wheelchair users. Wheelchair users also noted that the position of the wheelchair space was often not ideal as it is often outside the toilet, and located near to the train doors which often results in the wheelchair user being hit with other passengers' bags or elbows. The width of the aisles and seating configurations also do not allow for wheelchair users to sit with their travelling companions or allow them to move away from other passengers if necessary. Consistency in layout and audio announcements were important to those with visual impairments, while clear audio and visual announcements were key for those with hearing impairments, including features such as loop systems at priority seating.

8.1.9   Whilst the accessible toilet facilities were not criticised in the Thameslink research, Scottish passengers with mobility and visual impairments felt that these could be improved upon by making them slightly larger to allow a wheelchair to manoeuvre and to accommodate a guide dog and/or carer. Visually-impaired passengers in Scotland also identified and prioritised having high visibility and contrasting colours used for carriage and toilet doors, all entry/exit buttons, handrails/grab handles, and priority seating, which were not discussed in the Thameslink research.

8.2   Future design priorities

8.2.1   Many key requirements and future design priorities were identified and discussed throughout the various sections covered in the focus groups and interviews.

8.2.2   Cleanliness was a major factor across the sections of discussion for most respondents; therefore, any elements that can be incorporated in design, such as larger and/or more bins, non-stain fabrics/materials, scratch-proof glass, etc should be seen favourably.

8.2.3   A key general future design priority for disabled passengers is consistency in design between services. This is particularly valued by visually-impaired passengers to allow them to find the doors, access buttons, seats, toilets, etc on-board every train, and is unlikely to create any conflicts with the requirements/preferences of other passengers.

8.2.4   Specific future priorities for passengers in general and for those with mobility and/or sensory impairments are outlined under the following headings.

Accessibility

8.2.5   Although accessibility issues were largely raised and prioritised more highly by respondents with mobility and sensory impairments, they were also discussed by other respondents across the focus groups, and should not, therefore be seen as being restricted to, or only beneficial to those with impairments.

8.2.6   **Minimising the gap** between the carriage and the platform and/or **integrated automatic ramps** under doors to facilitate easier access to board/alight the trains were considered key requirements and design priorities for the future. This would be beneficial to many passenger groups, including those with mobility impairments, those with guide dogs, the elderly, children, those with prams/buggies, etc. It would also remove the need for those with mobility impairments to book travel arrangements 24 hours in advance and eliminate the risk that these arrangements are not fulfilled by the train operator.

8.2.7   **Contrasting colours** used for doors, entry/exit buttons, handrails, toilet facilities (including the fixtures and fittings within the cubicle), etc, and Braille marking on door entry buttons were considered key priorities for those with visual impairments, and are unlikely to create any conflicts in design priorities for other passengers.

8.2.8   More **priority seating** for passengers with mobility or sensory impairments was also discussed. This should be close to the doors, have more legroom to accommodate guide dogs, be in contrasting colours to allow those with visual impairments to find them, and be better signed so that other passengers do not use them, or vacate them when required. This may be seen to reduce the seating capacity for other passengers however, so may lead to design conflicts, although these seats could be used by other passengers when not required by those with impairments.

8.2.9   Increased **space in the toilets** was also identified as a priority for respondents with mobility impairments, particularly those who used a wheelchair. They felt that all toilets should be accessible, and that they should be large enough to manoeuvre a wheelchair and accommodate a carer or guide dog. While most other respondents also indicated a preference for large toilets, this may cause conflict with other passengers should any further increase in the size result in a loss of seats or luggage space.

Comfort

8.2.10   **Ability to get a seat** appears to be one of the most important factors for all passengers. There is a general expectation in Scotland that all passengers will be able to get a seat and not have to stand, regardless of journey purpose or the time of travel, the station boarded, etc. Respondents did, however, acknowledge that where standing was unavoidable, sufficient space should be allocated for this, which incorporated hand holds to allow passenger to stand safely, particularly in the door areas. However, standing in the door areas is likely to impede disabled access to the train.

8.2.11   Seats should be **comfortable** with sufficient **legroom**, yet **aisle width** is also important.

8.2.12   **Table seats** are preferred by many, including passengers who travel with guide dogs, and are highly valued by those who use laptops/wish to work whilst travelling. Those with guide dogs prefer either **priority seating** with extra legroom or seats at tables as the dog can be accommodated under the table.

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8.2.13   Although there was no clear consensus amongst passengers generally with regards to **seat layout**, British Sign Language (BSL) users prefer seats facing each other so they can communicate via sign language.

8.2.14   **Foldable armrests** throughout were seen as beneficial, both in creating a feeling of personal space and in assisting passengers with mobility impairments to get in and out of seats.

8.2.15   There may be some conflict between the seating requirements and ability to get a seat, as incorporating large, comfortable seats, with good legroom, folding arms at every seat, more tables and a wide aisle may in fact lead to a reduction in the number of seats provided rather than allow an increase as preferred.

8.2.16   **Air conditioning/temperature control** was important to most respondents, and some said it would be good if individual units could be positioned above each seat, similar to those found in aeroplanes.

8.2.17   **Lighting** was considered important, particularly for those with visual impairments. This included both good natural light, well positioned electric lights, and the inclusion of blinds on every window.

8.2.18   **Handrails** were also considered to be important by most respondent types, both to aide standing and moving around the carriage when the train is in motion. Visually-impaired passengers also benefit from these being in contrasting colours to the rest of the carriage so that they can see them better.

On-board facilities

8.2.19   In relation to cleanliness again, many respondents felt there should be **more and/or bigger bins**.

8.2.20   **Large accessible toilets** were preferred by most respondents. For mobility-impaired passengers these need to be large enough to manoeuvre a wheelchair and accommodate a carer. For those with visual impairments, they should be consistently located/designed on-board all trains and the doors and control buttons should be in contrasting colours. For other passengers, desirable features included dryers rather than tissues, sanitiser, baby changing table, materials/facilities which can be easily cleaned, and the provision of more handrails.

8.2.21   **Luggage areas** at the end of carriages were not popular with passengers as many feel this introduces safety/security risks and worry that their luggage may be tampered with when it is out of their sight. A lack of sufficient luggage space was also seen as leading to the wheelchair space(s) being used by other passengers for storing luggage.

8.2.22   **Safety features** were also considered to be important by most respondents. These included elements such as CCTV, fire extinguishers, signs for first aid, emergency exits, etc, as well as handrails/grab handles to aid standing and walking in the carriage, and a reduced gap between the carriage and platform to allow safe access.

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Information

8.2.23   Both **visual and audio announcements** were considered strengths by all respondents, and are particularly important to meet the needs of sensory-impaired passengers. These need to be clear, concise, and provide comprehensive information including: next stop information; final destination; estimated time of arrival/time remaining until next stop; information about delays, cancellations, and emergencies; etc. The potential for **headphones** to hear announcements and **loop systems** at priority seating was also identified as beneficial.

8.2.24   **Written information** should be provided in an Arial font and with a minimum point size of 14; the text should be written in sentence form rather than capitals. Large print and Braille hard copies should also be available from staff where it is not possible to incorporate this into the on-board signs.

8.2.25   **Route maps** were also identified as beneficial by both hearing-impaired respondents and others. Hearing-impaired respondents described a map with lights that light up to illustrate which station on the route the train is approaching. Others identified a digital image such as Google Maps to alert people to the next stop.

8.2.26   Many respondents, both mobility/sensory-impaired and otherwise felt that **signs on both the front and sides of the train** displaying information like the destination, departure time and carriage number are beneficial; those with sensory impairments did, however, request that this was displayed in large print.

8.3   Class 380 Design

8.3.1   The Class 380 appears to meet many of the respondents needs, including extra and comfortable seats; extra legroom; more space for luggage under seats and at tip-up seats; inclusion of power points; CCTV; and the electronic information displays, both internal and external.

8.3.2   The tip-up seats on the Class 380 were largely considered as a good idea and made flexible use of space. It was acknowledged that this space could be used by wheelchair users, cycles, people with prams and buggies, for storing and sitting with bulky luggage, standing space, and providing additional seating when the space was not required by others.

8.3.3   Weaknesses of the Class 380, however, included too few and too small tables, a lack of hand holds for standing at the doors, a lack of litter bins, the location of the main luggage storage racks (i.e. located at the doors). A desire for wi-fi and individually controlled air conditioning (such as found on planes) was expressed.

8.4   Conclusion

8.4.1   Overall, the new design of the Class 380 appears to address many of the respondents' concerns/issues with current stock and incorporates many of the design features they would desire in the future. However, there still remain some elements where further improvements could be made.

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8.4.2   Also, while it is acknowledged that the Class 380 and other trains in Scotland comply with current regulations, many respondents expect the on-board facilities to exceed the minimum requirements in order to improve their current rail experiences.

8.4.3   Most design features identified are common across the user types and the routes, albeit that certain busier routes require additional consideration to be given to capacity issues, and where the line connects with Scotland's airports luggage issues are perhaps more important than elsewhere. Only a small number of truly additional features are required by passengers with mobility/sensory impairments, which are largely compatible with those of other passengers. Only a minority of requirements are likely to result in conflicting priorities which will need to be addressed by the operating companies.

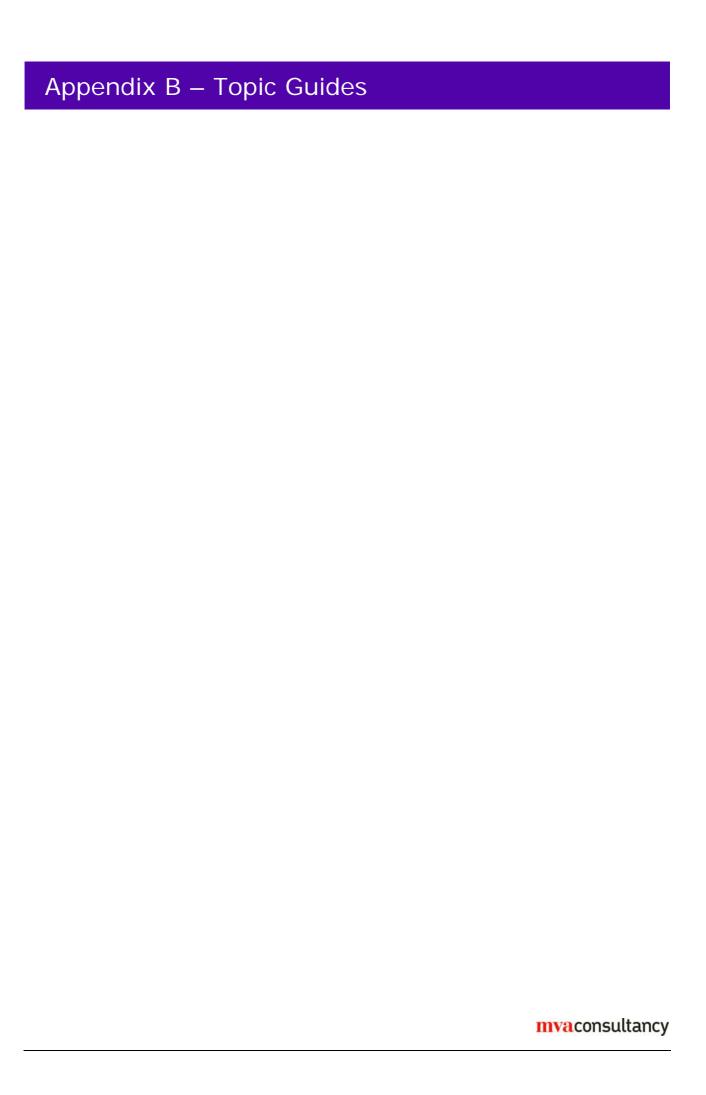# Appendix A – Pre-Group Questionnaire

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Rolling Stock Design Focus Groups

Should you make a train journey on the route you were using when invited to attend the focus group, please complete this one-page questionnaire and bring it with you to the focus group.

You only need to log the details of <u>one</u> journey. Please complete the questionnaire based upon your experiences on this journey, and not based upon any generalised opinions.

Thank you very much in advance for agreeing to take part in this research. If you have any questions about what you need to do before the focus group, please contact Elaine Wilson Smith at MVA Consultancy on 0141 225 4412.

Q1. Date

Q2. Departure Time

Q3. Departure Station

Q4. Arrival Station

Q5. On a scale of 1 to 5, where 1 is 'very dissatisfied' and 5 is 'very satisfied', how dissatisfied or satisfied were you with each of the following features on the train for the journey stated above: **(TICK ONE BOX PER ROW FOR EACH OF THE FEATURES LISTED BELOW)**

	Very Dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very Satisfied	Can't remember/ Did not use
a) ease of getting on and off train: doors and steps	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
b) width of the aisles	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
c) availability of seating	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
d) comfort of seats	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
e) leg room	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
f) ease of moving through train: floor and grab rails	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
g) provision and design of toilets	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
h) cleanliness of toilets	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
i) information during journey: displays, announcements	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
j) luggage space	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
k) cycle storage area	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
l) availability of space for prams/wheelchairs, etc	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
m) adequate heating/good temperature control	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
n) general feeling of space	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$
o) general design and appearance of train interior	$\square_1$	$\square_2$	$\square_3$	$\square_4$	$\square_5$	$\square_6$

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Appendix B – Topic Guides

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Ask participants to introduce themselves by stating:

- their name;

- whether they travel by train mostly to commute, for business or leisure;

- how frequently they travel by train and at what times of the day; and

- what stations they most commonly travel between.

10.1   What are your general feelings about Scotrail's current rolling stock and on-board facilities?

> (PROMPT: appearance, internal livery (i.e. colours/branding), space, comfort, safety & security, information provision, on-board facilities, etc)

10.2   Have you ever been particularly impressed by the on-board environment of a particular train operating company? If so, why were you impressed?

10.3   Is there anything that can be learnt from your experience of other transport (such as air, subway, bus, tram, etc), both here and abroad?

10.4   Thinking about your past and current experiences what would you say are your key on-board requirements?

> (PROMT: appearance, internal livery (i.e. colours/branding), comfort, safety, security, width of isles, space for luggage, always getting a seat, leg room, tables, catering facilities, grab rails, wi-fi, mobile phone reception, etc)

10.5   Please rank these requirements to show which one is the most important through to the least important?

10.6   What do you think Scotrail's key areas for improvement should be?

> (PROMT: appearance, internal livery (i.e. colours/branding), comfort, safety, security, width of isles, space for luggage, always getting a seat, leg room, tables, catering facilities, grab rails, wi-fi, mobile phone reception, etc)

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11.1   Please spend the next 5 minutes **describing what the features of your ideal train would be, taking into consideration the following:**

- **design** (e.g. 2x2 or 2x3 seating, tables, colours, location of doors, etc);

- **appearance** (colours, branding, light, airy, etc);

- **safety** (gap, step, CCTV, fire extinguisher, emergency exits and signs, etc);

- **comfort** (seating, ride quality, draughts from doors, leg room, temperature, etc);

- **seating** (number, comfort, etc);

- **toilets** (number, location, accessibility, baby changing, cleanliness, features, types of locks, etc); and

- **any extra on-board facilities** you might like to see (e.g. catering, wi-fi, mobile phone reception, disabled facilities, bike racks, luggage racks, hand/grab rails, etc).

11.2   Of the ideas that you have come up with, what is the most **important features to you and why?**

11.3   What is the least **important feature to you and why?**

11.4   How would a train that incorporated your ideal features change your experience of rail travel/travel patterns?

TRANSPORT MUSEUM VENUE – Visit the mock-up of the new Class 380 which will be introduced onto the Ayrshire/Inverclyde/North Berwick lines.

OTHER VENUES – Show respondents promotional leaflet and virtual tour of the new Class 380 to be introduced onto the Ayrshire/Inverclyde/North Berwick lines.   Also show respondents the photo boards that illustrate possible designs for future new rolling stock.

12.1   Topics for discussion:

- your initial reactions to the design;

- what you think are the key features of the designs;

- what priority you would place on each of the key elements;

- what you think are the strengths and weaknesses of the designs;

- how the designs compare to the ideas you came up with during the ideal train exercise;

- are there any gaps between these designs and what you would ideally like; and

- do you think these proposed designs will improve any of the issues that you have identified?

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13.1   Thinking about accessibility**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
■   ease of getting on and off (e.g. gap or step);
■   location of doors (end of carriages, evenly spaced, other);
■   legroom/access (ease of finding a seat, access to get in and out of seats);
■   handrails (vertical handrails – locations, grab handles on seat backs, overhead rails);
■   priority seating for passengers with disabilities;
■   wheelchair/pram/buggy space (location, every door or one end of carriage);
■   bicycle space (location, every door or one end of carriage); and
■   any others.

13.2   Thinking about comfort**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
■   getting a seat;
■   seating layout and space (2x2, 2x3, tables (including full/half size), folding seats/tables);
■   leg room;
■   comfort of ride and seats;
■   suitability of standing space;
■   chair arms including whether those at windows should be fixed or movable;
■   antimacassars (i.e. small cloth placed over the backs or arms of chairs to prevent soiling of the permanent fabric);
■   interior décor (colour, branding, cleanliness, upkeep);
■   lighting and temperature;
■   ability to screen the sun;
■   draughts from doorways;
■   level of noise from train engine;
■   inclusion of first class facilities (every train/certain routes, locations, facilities); and
■   any others.

13.3   Thinking about on-board facilities**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
■   toilet facilities (size, locks, cleanliness, accessible, baby changing, location, number per train);
■   litter bin (number, design and location);
■   coat hook;
■   power sockets (number, locations – i.e. all seats/only at tables);
■   luggage space (location, design, overhead/at doors/under seats, security);
■   wi-fi;
■   mobile phone coverage; and
■   any others.

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13.4   Thinking about information**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
- exterior information – content, location and clarity;
- front and rear of train (e.g. destination);
- sides of carriages (e.g. destination, carriage number, seats, etc);
- journey information inside carriages – content, location and clarity;
- electronic display (number, location, frequency & timing of information, type of information);
- announcements (by staff or automated voice, type of information, frequency & timing);
- route maps (location);
- seating plan information and ease of finding reserved seat (locations); and
- any others.

14.1   From the design specifics above, which features/aspects do you value most?

14.2   From the design specifics above, which of the features/aspects have little real impact at all?

14.3   How would your key requirements change for different types of journey, e.g. commuting/business/leisure; longer versus shorter journeys; or at different times of the day, e.g. peak/off-peak/night? Also, would your requirements change if you were boarding at different stations (e.g. intermediate stations rather than at the origin)?

14.4   Budget and space constrains may mean that all your features cannot be accommodated, so which aspects are the main requirements and which would just be nice to have?

15.1   Moderator should summarise the key outputs from the session including:
- issues with current designs;
- response to possible designs (e.g. Class 380/photoboard stimulus);
- the extent to which designs overcome current issues; and
- what else is needed.

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1.1 Ask participants to introduce themselves by stating:

- their name;

- whether they travel by train mostly to commute, for business or leisure;

- how frequently they travel by train and at what times of the day; and

- what stations they most commonly travel between.

2.1 What are your general feelings about Scotrail's current rolling stock?

(PROMPT: appearance, internal livery (e.g. colours/branding), space, comfort, safety & security, information provision, on-board facilities, etc)

2.2 Have you ever been particularly impressed by the on-board environment of a particular train operating company? If so, why were you impressed?

2.3 Is there anything that can be learnt from your experience of other transport (such as air, subway, bus, tram, etc), both here and abroad?

2.4 What do you think Scotrail's key areas for improvement should be?

(PROMT: appearance, internal livery (e.g. colours/branding), comfort, safety, security, width of isles, space for luggage, always getting a seat, leg room, tables, catering facilities, grab rails, wi-fi, mobile phone reception, etc)

2.5 Thinking about your past and current experiences what would you say are your key on-board requirements?

(PROMT: appearance, internal livery (i.e. colours/branding), comfort, safety, security, width of isles, space for luggage, always getting a seat, leg room, tables, catering facilities, grab rails, wi-fi, mobile phone reception, etc)

2.6 Please rank your key requirements from the most important through to the least important.

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3.1   Please spend the next 5 minutes **describing what the features of your ideal train would be, taking into consideration the following:**

- **design** (e.g. 2x2 or 2x3 seating, tables, colours, location of doors, etc);

- **appearance** (colours, branding, light, airy, etc);

- **safety** (gap, step, CCTV, fire extinguisher, emergency exits and signs, etc);

- **comfort** (seating, ride quality, draughts from doors, leg room, temperature, etc);

- **seating** (number, comfort, etc);

- **toilets** (number, location, accessibility, baby changing, cleanliness, features, types of locks, etc); and

- **any extra on-board facilities** you might like to see (e.g. catering, wi-fi, mobile phone reception, disabled facilities, bike racks, luggage racks, hand/grab rails, etc).

3.2   Of the ideas that you have come up with, what is the most **important features to you and why?**

3.3   What is the least **important feature to you and why?**

3.4   How would a train that incorporated your ideal features change your experience of rail travel/travel patterns?

TRANSPORT MUSEUM VENUE – Visit the mock-up of the new Class 380 which will be introduced onto the Ayrshire/Inverclyde/North Berwick lines.

OTHER VENUES – Show respondents promotional leaflet and virtual tour of the new Class 380 to be introduced onto the Ayrshire/Inverclyde/North Berwick lines.   Also show respondents the photo boards that illustrate possible designs for future new rolling stock.

4.1   Topics for discussion:

- your initial reactions to the design;

- what you think are the key features of the designs;

- what priority you would place on each of the key elements;

- what you think are the strengths and weaknesses of the designs;

- how the designs compare to the ideas you came up with during the ideal train exercise;

- are there any gaps between these designs and what you would ideally like; and

- do you think these proposed designs will improve any of the issues that you have identified?

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5.1   Thinking about accessibility**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
- ease of getting on and off (e.g. gap or step);
- location of doors (end of carriages, evenly spaced, other);
- legroom/access (ease of finding a seat, access to get in and out of seats);
- handrails (vertical handrails – locations, grab handles on seat backs, overhead rails) ;
- priority seating for passengers with disabilities;
- wheelchair/pram/buggy space (location, every door or one end of carriage);
- bicycle space (location, every door or one end of carriage); and
- any others.

5.2   Thinking about comfort**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
- getting a seat;
- seating layout and space (2x2, 2x3, tables (including full/half size), folding seats/tables);
- leg room;
- comfort of ride and seats;
- suitability of standing space;
- chair arms including whether those at windows should be fixed or movable;
- antimacassars (i.e. small cloth placed over the backs or arms of chairs to prevent soiling of the permanent fabric);
- interior décor (colour, branding, cleanliness, upkeep);
- lighting and temperature;
- ability to screen the sun;
- draughts from doorways;
- level of noise from train engine;
- inclusion of first class facilities (every train/certain routes, locations, facilities); and
- any others.

5.3   Thinking about on-board facilities**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:
- toilet facilities (size, locks, cleanliness, accessible, baby changing, location, number per train);
- litter bin (number, design and location);
- coat hook;
- power sockets (number, locations – i.e. all seats/only at tables);
- luggage space (location, design, overhead/at doors/under seats, security);
- wi-fi;
- mobile phone coverage; and
- any others.

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5.4   Thinking about information**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:

- exterior information – content, location and clarity;
- front and rear of train (e.g. destination);
- sides of carriages (e.g. destination, carriage number, seats, etc);
- journey information inside carriages – content, location and clarity;
- electronic display (number, location, frequency & timing of information, type of information);
- announcements (by staff or automated voice, type of information, frequency & timing);
- route maps (location);
- seating plan information and ease of finding reserved seat (locations); and
- any others.

6.1   From the design specifics above, which features/aspects do you value most?

6.2   From the design specifics above, which of the features/aspects have little real impact at all?

6.3   How would your key requirements change for different types of journey, e.g. commuting/business/leisure; longer versus shorter journeys; or at different times of the day, e.g. peak/off-peak/night? Also, would your requirements change if you were boarding at different stations (e.g. intermediate stations rather than at the origin)?

6.4   Budget and space constrains may mean that all your features cannot be accommodated, so which aspects are the main requirements and which would just be nice to have?

7.1   Moderator should summarise the key outputs from the session including:

- issues with current designs;
- response to possible designs (e.g. Class 380 or photoboard stimulus);
- the extent to which designs overcome current issues; and
- what else is needed.

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Topic Guide for Infrequent Rail Users

1.1   **Ask participants to introduce themselves by stating:**

- their name;

- what current mode(s) of transport they use to travel to work and for leisure; and

- why they don't generally travel by train (PROMPT: ask if on-board facilities/environment ever play a part in the decision not to travel by train).

Moderator to hand out photoboards of Scotrail's current rolling stock.

2.1   **What are your initial thoughts about Scotrail's current rolling stock, and how does it match your expectations?**

(PROMPT: appearance, internal livery (i.e. colours/branding) space, comfort, safety & security, information provision, on-board facilities)

2.2   **Is there anything that can be learnt from your experience of other transport (such as air, subway, bus, tram, etc), either here or abroad?**

2.3   **Have you ever been particularly impressed by the on-board environment of any public transport that you have travelled on? If so, why were you impressed?**

2.4   **Based on, either your previous experiences or the photos you have seen, what do you think Scotrail's key areas for improvement should be?**

(PROMT: appearance, internal livery (i.e. colours/branding), comfort, safety, security, width of isles, space for luggage, always getting a seat, leg room, tables, catering facilities, grab rails, wi-fi, mobile phone reception, etc)

2.5   **Thinking about your past and current experiences of any mode public transport, what would you say would be your** key **on-board requirements on a** train **if you were to use one?**

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(PROMT: appearance, internal livery (e.g. colours/branding), comfort, safety, security, width of isles, space for luggage, always getting a seat, leg room, tables, catering facilities, grab rails, wi-fi, mobile phone reception, etc)

2.6   Of the key requirements that you have just identified, please identify those that are the most important and those that are just nice to have.

3.1   Please spend the next 5 minutes **describing what the features of your ideal train would be, taking into consideration the following:**

- **design** (e.g. 2x2 or 2x3 seating, tables, colours, location of doors, etc);

- **appearance** (colours, branding, light, airy, etc);

- **safety** (gap, step, CCTV, fire extinguisher, emergency exits and signs, etc);

- **comfort** (seating, ride quality, draughts from doors, leg room, temperature, etc);

- **seating** (number, comfort, etc);

- **toilets** (number, location, accessibility, baby changing, cleanliness, features, types of locks, etc); and

- **any extra on-board facilities** you might like to see (e.g. catering, wi-fi, mobile phone reception, disabled facilities, bike racks, luggage racks, hand/grab rails, etc).

3.2   Of the ideas that you have come up with, what is the most **important features to you and why?**

3.3   What is the least **important feature to you and why?**

3.4   How would a train that incorporated your ideal features change your experience of rail travel/travel patterns? Where possible, would you be encouraged to use the train more?

TRANSPORT MUSEUM VENUE – Visit the mock-up of the new Class 380 which will be introduced onto the Ayrshire/Inverclyde/North Berwick lines.

4.1   Topics for discussion:

■   your initial reactions to the design, and how well does it meet your expectations for future designs;

■   what you think are the key features of the designs;

■   what priority you would place on each of the key elements;

■   what you think are the strengths and weaknesses of the designs;

■   how the designs compare to the ideas you came up with during the ideal train exercise, are there any gaps between these designs and what you would ideally like;   and

■   do you think these proposed designs will improve any of the issues that you have identified, or make you more likely to use the trains?

        PROMPTS: Things to identify and discuss if required may include:
        –   layout and comfort of seats;
        –   leg room;
        –   number, location and size of tables;
        –   flexible use of space, e.g. folding chairs and tables;
        –   suitability of standing space;
        –   CCTV;
        –   open appearance under seats, does this provide additional security as can see left luggage;
        –   extent of luggage space;
        –   size & quality of toilet facilities;
        –   colours/branding.

5.1   Thinking about accessibility**, what design features would you like to see incorporated into new rolling stock?**

        Moderator should use the following prompts to encourage discussion if required:
        ■   ease of getting on and off (e.g. gap or step);
        ■   location of doors (end of carriages, evenly spaced, other);
        ■   legroom/access (ease of finding a seat, access to get in and out of seats);
        ■   handrails (vertical handrails – locations, grab handles on seat backs, overhead rails);
        ■   priority seating for passengers with disabilities;
        ■   wheelchair/pram/buggy space (location, every door or one end of carriage);
        ■   bicycle space (location, every door or one end of carriage); and
        ■   any others.

5.2   Thinking about comfort**, what design features would you like to see incorporated into new rolling stock?**

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Moderator should use the following prompts to encourage discussion if required:

- getting a seat;
- seating layout and space (2x2, 2x3, tables (including full/half size), folding seats/tables);
- legroom;
- comfort of ride and seats;
- suitability of standing space;
- chair arms including whether those at windows should be fixed or movable;
- antimacassars (e.g. small cloth placed over the backs or arms of chairs to prevent soiling of the permanent fabric);
- interior décor (colour, branding, cleanliness, upkeep);
- lighting and temperature;
- ability to screen the sun;
- draughts from doorways;
- level of noise from train engine;
- inclusion of first class facilities (every train/certain routes, locations, facilities); and
- any others.

5.3   **Thinking about** on-board facilities**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:

- toilet facilities (size, locks, cleanliness, accessible, baby changing, location, number per train);
- litter bin (number, design and location);
- coat hook;
- power sockets (number, locations – e.g. all seats/only at tables);
- luggage space (location, design, overhead/at doors/under seats, security);
- wi-fi;
- mobile phone coverage; and
- any others.

5.4   **Thinking about** information**, what design features would you like to see incorporated into new rolling stock?**

Moderator should use the following prompts to encourage discussion if required:

- exterior information – content, location and clarity;
- front and rear of train (e.g. destination);
- sides of carriages (e.g. destination, carriage number, seats, etc);
- journey information inside carriages – content, location and clarity;
- electronic display (number, location, frequency and timing of information, type of information);
- announcements (by staff or automated voice, type of information, frequency and timing);

- route maps (location);
- seating plan information and ease of finding reserved seat (locations); and
- any others.

6.1   From the design specifics above, which features/aspects do you value most?

6.2   From the design specifics above, which of the features/aspects have little real impact at all?

6.3   How would your key requirements change for different types of journey you may make, e.g. commuting/business/leisure; longer versus shorter journeys; or at different times of the day, e.g. peak/off-peak/night? Also, do you think your requirements would change if you were boarding at different stations (i.e. intermediate stations rather than at the origin)?

6.4   Budget and space constrains may mean that all your features cannot be accommodated, so, from everything we have discussed so far, which aspects are the main requirements and which would just be nice to have?

7.1   Moderator should summarise the key outputs from the session including:

- issues with current designs;
- response to possible designs (e.g. Class 380);
- the extent to which designs overcome current issues; and
- what else is needed.

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