



HS2 Passenger panel

March tasks: seats and carriage layout

April 2017

Agenda

- Panel participation
- Mini task – your train seat
 - Summary
- Train carriage layouts – parts 1&2
 - Summary
- Next task
- Workshop
- Panel refresh?
- AOB

Panel participation

Task	Date	Participation
Workshop Feedback	20 th June – 20 th July	97%
Station Design Document	8-29 th July 2016	90%
Ticket Purchasing Concept (P1)	12 th August– 26 th August	90%
Ticket Purchasing Concept (P2)	26 th August – 2 nd September	90%
Ticket Gates	9 th September – 2 nd October	92%
Personalise The Panel	9 th September – 9 th October	95%
Luggage (Part 1)	14 th October – 24 th October	85%
Luggage (Part 2)	21 st October – 4 th November	87%
Food Diary	11 th November – 18 th November	79%
Your Eating Habits	18 th November – 25 th November	79%
Food on Transport	25 th November – 2 nd December	89%
Train Design Ideas	13 th January – 31 st January	82%
Train Carriage Consistency	10 th February to 27 th February	95%
Train carriage layout part 1	17 th March to 14 th April	63%
Train carriage layout part 2	23 rd March to 14 th April	68%
Your train seat mini task	17 th March to 14 th April	76%

} 95%

} 89%

Top contributors: Train seat & Carriage Layouts

Top Contributor:



James

Closely followed by...



Amanda
(Millie)



Mohammed



Jon Adams

Discussion: Minitask – your trainseat

HS2 would like to understand what seats feel comfortable, in terms of space, for customers.

Thinking about the seat on the trains you regularly travel on, what are your thoughts on:

- 1) the size of the aisle width
- 2) the space between the arm rests
- 3) the space between yourself when seated and the seat in front of you
- 4) consider if you would prefer to lose aisle space for your seat width or vice versa, what are the positives and negatives of doing this?

This mini task will run for four weeks as we would like you to really consider these four points the next time you take a train journey.

Task 96, posted 17/3/2017, ended 14/4/2017

Overall key issues raised by minitask

Personal space

- Feeling of personal space is key
- Encroachment on this space is stressful for some
- Some prefer facing others to airline others have strong dislike

Luggage

- Takes space by seats
- Carrying luggage causes issues

HS2 expectation

- HS2 is expected to deliver a better standard than is currently experienced/ come up with innovative solutions/ be as good as the best

Accessibility

- Needs of disabled passengers need to be taken into account

Consideration

- How other passengers behave makes a difference in terms of the space available

Future/ current trends

- HS2 needs to take into account that the current trend is for the population to get larger – height and weight

Comfort

- Space is only one part of comfort – seats themselves in terms of padding and design also key

Height/ weight

- Passengers dimensions have a strong impact on comfort during journey

Sense of space

- Airline seats avoided by some because they are felt to be 'claustrophobic'

Examples of comments on key issues

I would hope that designers could come up with a design that optimises use of space without compromising space allocated to seating and aisles - will the HS2 carriages be restricted to the same gauge in use at present on the railway system? **Business (51-60)**

HS2 expectation

I find train seats generally to be v uncomfortable. The rigid back shape bares no resemblance to my back and there is v little padding if any on the seats. They are generally dirty. **Leisure (61-70)**

Comfort

Aisle space on a train is important simply because you do not want to knock into or bang anyone already in there seat as you pass by them as this is very frustrating and could even hurt somebody. **Leisure (18-30)**

Luggage

I often find myself trying to be as small as possible when sitting down, I cannot relax my arms / shoulders due to these encroaching on the seat next to me and I am often in discomfort with my legs in the train is busy due to having to squash these in. **Leisure (18-30)**

Size

I haven't had a problem with the space between my seat and the one in front [mostly uses Southeastern] apart from the ones on Virgin trains when I've gone up to Birmingham there was so little space that I had to keep taking painkillers because it was so tight and uncomfortable

Leisure (31-40)

Comfort

I think there is a very real issue here with seat width versus aisle width. I don't think designers can ignore the trend for an increase in the average sizes for both genders in terms of height and width. This may of course reverse but it doesn't look that way in the immediate future. **Business (51-60)**

Future trends

More comments on key issues

As you're opposite someone, your space sort of depends on each other. It's give and take. It is fine except if people want to put bags by their feet that then protrude into the opposite person's leg/foot space. Not good form, but guess what, it happens! Also crossing legs, man- spreading- just the stuff we do unthinkingly, can become another travellers bug-bear.

Business (51-60)

Consideration

For me the arm rests and the width of the seats are fine, however when seated next to bigger sized passengers than myself it has resulted me being squashed in the corner and them spilling onto my side!

Commuter (18-30)

Personal space

...
However, the space between seats in front when sat down seem to be minimal. It is far from comfy and I feel quite trapped sometimes to be honest.

Commuter (18-30)

Sense of space

From the wheelie user's viewpoint, I'd like to see these wider, just for manoeuvring purposes, and possibly actually being able to trundle in an aisle to get to toilet/catering or other facilities.

Leisure (51-60)

Accessible

...even as I consider myself with an 'average-sized person' I find the space between the arm rests and between the front seats to be extremely restrictive. Too many a times I have found myself extremely uncomfortable during my journey, where I wished I had taken an alternative medium of transport or just preferring to stand somewhere free. ...

Commuter (18-30)

Size

It would be disastrous if criticism took the form of "well, after the huge financial outlay on HS2, we can't even get a comfortable seat!" etc. That's why it's of such paramount importance to get this right

Leisure (70+)

HS2 Expection

Aisle space

Aisle space is considered to be just about adequate or not sufficient (minority) currently. But there are issues highlighted

People using an aisle

Luggage can be difficult to get through an aisle (suggestions around putting those with luggage close to storage/ using secure storage)

Difficult to pass through with children

Needs to be large enough to pass through without banging elbows and shoulders

Not enough places to hold onto (for standing passengers)

Can be difficult to pass through for those with accessibility issue

People sitting in an aisle seat

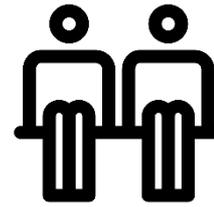
Cases, handbags and other belongings of those in aisle or passing through can encroach on personal space

People passing or standing in the aisles can encroach on personal space



Depends on how busy the train is – if the train is quiet it is not an issue but if it is busy for both commuter and long distance services issues can arise

Space between armrests



Not all trains have arm rests – those using commuter services, for example, indicated that they were not always present

Not strictly related to mini-task:

- Arm rests for larger passengers can mean getting in and out of a seat can be difficult and therefore they need to be maneuverable
- Arm rests next to windows currently not movable which means leaning against the wall is compromised. Also not easy to use wall arm rest as because of insufficient space
- 'Middle' arm rests can cause a bit of confusion because they don't 'belong' to a particular seat. Some panellists talked about how they 'shared' or 'warred' over this space. Others asked for 2 rests so it was clearer
- At least part of use of rests felt to be 'territory reserving'

Most frequently the 'space between the armrests' was interpreted to be the **width** of the seat but there were some comments which related specifically to issues around armrests



An individual's size was a key part of the evaluation for panellists in terms of the size of the seat ...

If they were 'normal' or 'average' sized then the space was thought to be **personally** adequate for most (but not all)

If a larger person, then seats were considered a squeeze – particularly with the armrests

However, some cited issues with those who were larger/ not considerate/ with a lot of personal luggage which meant this space was encroached on

Issue of the 'growing' size of the population highlighted – seats should be able to cope with this

Current seating experiences were not always thought of as **COMFORTABLE**

Space between yourself and seat in front



There were some **very strong views** on this which for some, was the most important issue around seating - having sufficient legroom to be comfortable

Height was the biggest factor in determining whether the current spaces they had experienced were adequate

However, those who were **not tall** did not always find current arrangements to be satisfactory

- As well as legroom, there were also mentions of having sufficient space between the seats (related to airline style) to avoid feelings of 'claustrophobia'
- Pull down tables could be a frustration because they weren't thought to provide sufficient space for a laptop (and one panellist mentioned the noise)
- A couple of taller panellists suggested making changes to the seats so that they provided more scope to push back (not reclining) and hence provide more legroom
- Conversely, leg rests mentioned as useful for those not as tall

- Passengers who described themselves as 'above average', tall or who were over 6' indicated they found current seating very inadequate in terms of the amount of legroom they had available to them (one recounted taking painkillers)
- A few of those that didn't have any issues with legroom for themselves expressed sympathy for those who were taller
- As with the width of the seat, some talked about the 'trend' being for people to get larger so that this legroom issue could not be ignored

- Panellists who described their height as 5'3" or 5'4" also suggested that there was too little space (although this could depend on the TOC)
- There were contrasts made between the different seating configurations – airline style vs facing passengers where a negotiation had to be made with those in front and their luggage. When not busy these forward facing seats did offer the possibility of more legroom however.

Trade off: aisle versus seat width



Aisle space

VS.

Seat width

This trade off was **not easy** for panellists to do because there was not a sense (in standard class certainly) that there was anything currently beyond barely adequate sizing for aisles or for seats. Indeed many who did make a 'choice' did say that neither space could be compromised from that which currently exists

- Many panellists did not think that aisle width could get any narrower than that already exists and there were frustrations that existed around current arrangements
- There were alternative suggestions of how issues related to the size of aisles could be addressed - for example by managing where larger items of luggage are placed or by having an aisle that was not central/ using compartments with a corridor
- Aisle width in terms of providing adequate **safety** was an issue
- Aisles need to be large enough for wheelchairs and for luggage to pass through

- Current seats were not felt to be over generous
- Whilst aisles were important for getting on and off the train, seats were considered by a few panellists to edge in terms of trade off because of the length of time spent in them, although there were caveats in terms of what the aisle space still needed to deliver
- A few panellists talked about improved comfort of seating and also the distance around the seat – perhaps ways of creating sense of space

Some couldn't choose, they just want the best of both: solution = make carriages larger, change configurations

Examples of 'trade off' comments

It's hard to substitute one for the other, however the obvious preference is **more seat space at the expense of aisle width**. The reason for this is because is that you spend most of your time in the seat and only a few minutes of a journey in the aisle. If we assume the width of the train is like what we are used to then the obvious negatives is for the people sitting away from the window seat who may find it even more uncomfortable as they get barged and nudged through their journey by passengers walking through the aisle and also when passengers are getting seated/leaving their seats on the parallel rows **Commuter (18-30)**

The aisle widths are big enough for me to walk comfortably and I'm not that small. In terms of losing aisle width. Provided that it's still roomy enough for say wheel chair users to get down I can't see there being an issue. Firstly, **the size of actual chairs should be more important than aisle space** and I'd like to see aisle space sacrificed in this way. I do think that the space between rows needs thinking through so that there's enough leg room available. **Commuter (31-40)**

As we are likely to spend more time **sitting down** in a seat during our HS2 journey, **it makes sense to make that a priority**. However, it is vital that suitable provision be made for disabled passengers and wheelchair users in terms of space - currently our commuter station and train is 100% disabled unfriendly!!!! **Business (51-60)**

I would prefer the seat to be no smaller than Standard class is already but of a better quality padding-wise! **If the aisle was wider that would feel better** in terms of environment but narrower would be a negative I feel. It might give a 'cattle shed' type vibe! **Business (41-50)**

Wider aisles will help with the free and easy flow of passengers and their respective luggage and wide(r) **seats and comfort is something that appears designers cannot afford to overlook** given the changing dimensions of future passengers. **Business (31-40)**

I understand that there is a trade-off between space and number of passengers a train can carry, but I am certain a better solution can be envisaged and designed. **Commuter (18-30)**

Mini task: Summary

- Seating is a very big issue for some panellists who find that current arrangements mean they travel in discomfort – mainly due to their height but also their size more generally. There were also mentions of the padding/ design of seats
- Even those who would not be described of above average height can find space/ leg room available challenging, it seems to be more of an issue than seat width – but this could be because people are less inclined to complain of this as an issue. And whilst panellists themselves did not often find seat width to be a problem:
 - It was linked to personal space in that space width meant fellow travellers sometimes ‘spilled over’
 - It was something that some prioritised over aisle space
- Issues with aisles, seating and space were always more prominent when services were crowded. For example...
 - Arrangements where seats face other passengers afforded more legroom when there was no one seated in front than the alternative ‘airline style’ seats but when passenger occupy them they may block legroom with bags and passengers need to negotiate where to place their feet
 - On busier services where there are more people looking for their seats/ occupying the aisles then bags and people are more likely to find their way into the personal space of those who are seated in aisle seats
- Aisles are important for safety, they need to be at a minimum possible to traverse with a piece of luggage and be accessible. If these standards are met some would be willing to prioritise seat space over aisle. However there is a desire to maintain both at current standards

Discussion: Train Carriage Layouts - Part 1

This week we are sharing with you three different train carriage layouts. These layouts are just **concepts** part of the **very early stage design process**.

Options A, B and C.

We would like you to study these different options in detail and consider:

- 1) location of the bike spaces (in relation to the doors, seating and other facilities)
- 2) luggage rack placement (in relation to your journey purpose) - particularly comparing Option B vs C
- 3) toilets in relation to the distance from your favourite seat location, and placement within the carriage - particularly Toilet 1 vs Toilet 2
- 4) catering locations
- 5) bay seating vs airline seating - particularly Option A and B vs C

This task will be open for 3 weeks. However we will be sharing more layout images with you next week for you to comment on, so please make sure you leave enough time to complete both parts

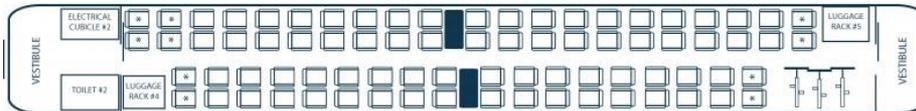
CARRIAGE TYPE A

☑ Priority Seating (legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of)



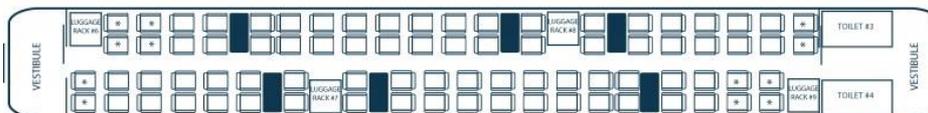
CARRIAGE TYPE B

☑ Priority Seating (legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of)



CARRIAGE TYPE C

☑ Priority Seating (legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of)



Discussion: Train Carriage Layouts - Part 2

the second part of this task we are sharing with you one more image with carriage type D and E. It's a rather long image so you do have to zoom in to see the detail. I have also added a zoomed in image of carriage D and E in case it is difficult to zoom in on the original image.

These layouts are just **concepts** part of the **very early stage design process**.

For those with mobility challenges we would like you to specifically consider if you think this is a more flexible layout to the three layouts we shared with you last week and if there anything additional you were expecting to see.

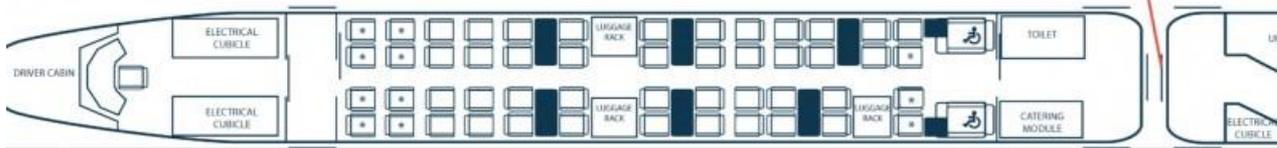
We would like you to study this layout in detail and consider:

- 1) location of the bike spaces (in relation to the doors, seating and other facilities)
- 2) luggage rack placement (in relation to your journey purpose)
- 3) toilets in relation to the distance from your favourite seat location, and placement within the carriage
- 4) catering location

CARRIAGE TYPES D and E

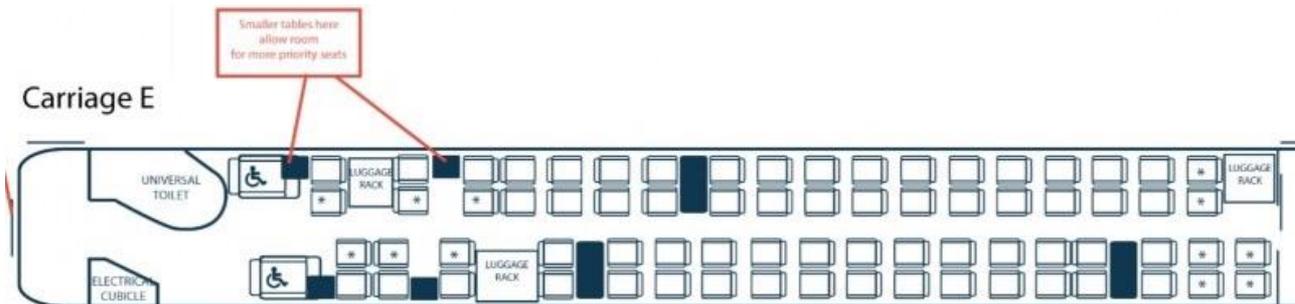


Carriage D



Carriage E

Carriage E



Bike storage...

Is it required?

- Most panelists acknowledged they did not typically use or take cycles on trains
- When commenting on designs A and B there was some surprise at the amount of bike storage
 - Sometimes seen as disproportionate compared to other facilities (eg luggage/ seating)
 - Suggestion that storage allocated outweighs demand, or that demand is stronger for comuter journeys rather than the longer distances of HS2

Location

- End of carriage, close to (but outside) doors was thought to work, ie out of the way
- Also suggestions that bike storage should be separated or in dedicated location, potentially bookable
- Issues highlighted of bike storage being close to disabled/ priority seating (in terms of danger)
- Issue of bike storage being too close to baggage/ other crush points and hence causing delays/ holdups at boarding

BUT there is a need:

- Others acknowledged/ welcomed a NEED for storage
- Not adequate on many services at present
- At present difficult for bike users but also can result in clogging up vestibules/ 'boxing' in disabled passengers

If they have to be in the carriage then it needs to be where they are stored out of the way- on our local commuter trains, they are an absolute pest, blocking the passageway and door exits. Often they are dirty and on congested services, it's not hard to see how you can get oily or dirty marks on your clothes



In this instance I would definitely have a storage space for bikes at one end of the train and not at the ends of each carriage and definitely not in the middle of a carriage, they take up far too much space



Seating....(1)

Layout choice impacted by personal preferences

- Layouts A-E all had a different mix and layout of 'airline' and 'bay' seating
- Preferences of the different layouts were strongly dictated by the proportions and the placements of the 'bay' seating
- This is because there are divisions amongst panelists as to their interest in these kinds of seats, which sometimes differed by travelling occasion...



'Airline' liked by those who wanted privacy or to work. Some requests for better tables/ **more** space for these seats/ reversible seating

I would like the choice of airline or bay seating depending on my mood when travelling and if there is any work I need to do on my commute. Sometimes I want to be on my own, sometimes I want a table that I can rest things on if my journey is long, or I maybe travelling as part of a group and so we would be able to sit together and converse comfortably whilst sitting close to each other.

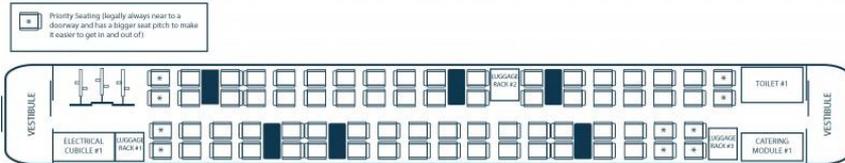
Claire F



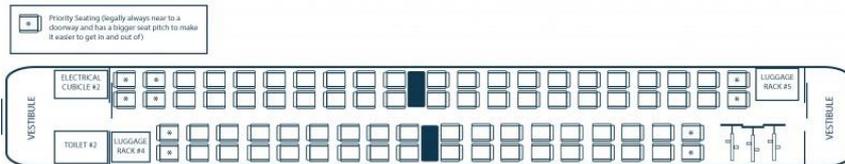
'Bay' liked by those who wanted to be able to work (space to spread out), to be sociable, and to feel less claustrophobic or cramped. Almost 'required' if in a group

Seating... (2)

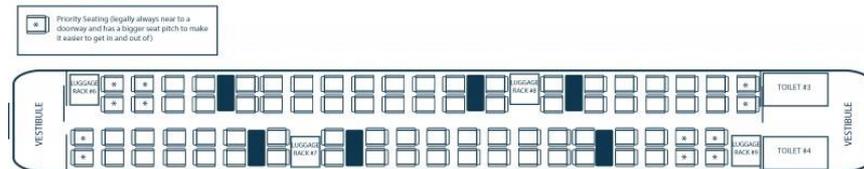
CARRIAGE TYPE A



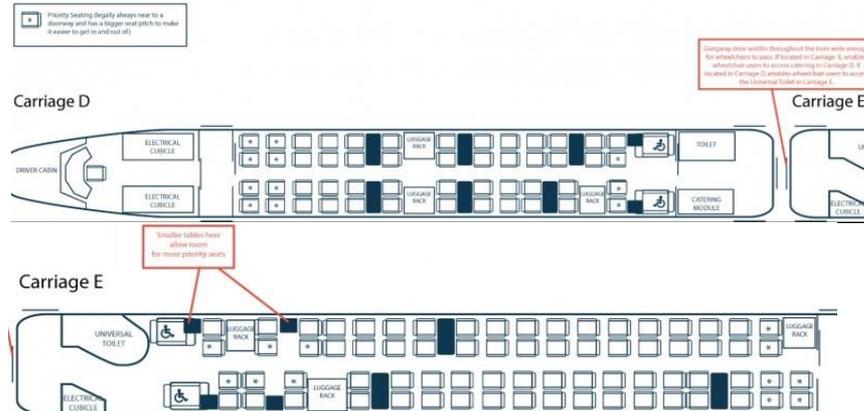
CARRIAGE TYPE B



CARRIAGE TYPE C



CARRIAGE TYPES D and E



Airline seat enthusiasts sometimes thought there were too many bays or that they were too spread out in this layout

Those who liked bay seating thought this design provided an inadequate amount

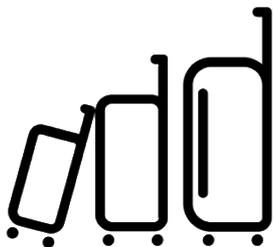
Airline seat enthusiasts sometimes thought there were too many bays or that they were too spread out in this design

Having the bay seat configurations close together was thought to provide a benefit in keeping noise together but conversely others felt that dispersing might be better for this reason

Luggage...1

Eyebrows raised on amount and type of storage that diagrams suggested

- For some felt to not be proportionate to the number of seats (too small)
- Queries over whether there would be additional storage under seats/ in lockers/ racks above seats
- Availability of 'Checked in' or other secure types of luggage storage was also raised following previous tasks/ discussions
- Issues also raised on accessibility for those who are unable to reach high to place bags or using lifts to be able to access higher storage points
- Being sufficient/ available to those using priority seats or disabled access seating



In A the luggage rack areas seem to have been squeezed out by the bike space and the 'central' luggage rack is a nonsense. B seems a much better solution although the luggage areas seem to be very small compared with the number of seats per carriage.

Business (51-60)

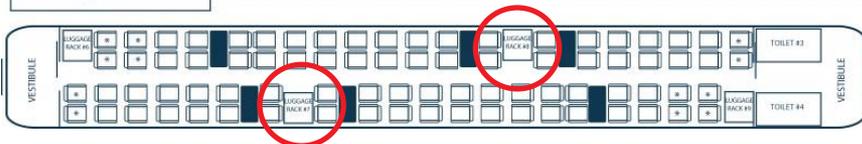
Luggage storage is a tricky issue here because you need to be able to see your own luggage for self security. This I think needs to come in the form of in or under your seat or a carriage/area with safety luggage space that you lock up with a key that you could put a deposit down for? That way you know luggage is safe because having it above you could cause the accident of it falling off or sliding along or even not fitting and having luggage space in the middle of the carriage would be awkward because you will have to too and fro past other people potentially hitting them on the way. **Leisure (18-30)**

Luggage...2

These designs were highlighted for having 'more' storage or storage points for luggage BUT divided opinion on the positions circled

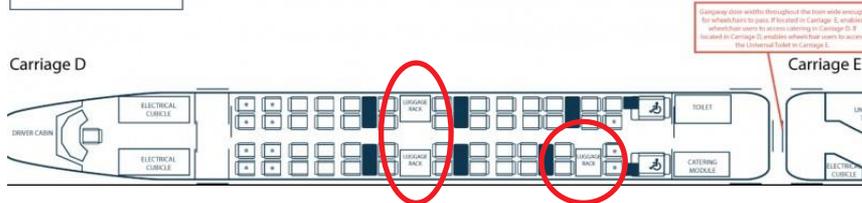
CARRIAGE TYPE C

Priority Seating (legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of)



CARRIAGE TYPES D and E

Priority Seating (legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of)



Some panelists observed that the 'checked in' luggage concept or other potential innovations to overcome the security need for some passengers of having bags close would be a way to mitigate this issue



LIKED:

- Good to be able to store luggage in a position close to where sitting/ feeling of security
- May reduce risk of people storing luggage in aisles/ on seats in order that they can see it
- May reduce some of the bottlenecks associated with boarding the train



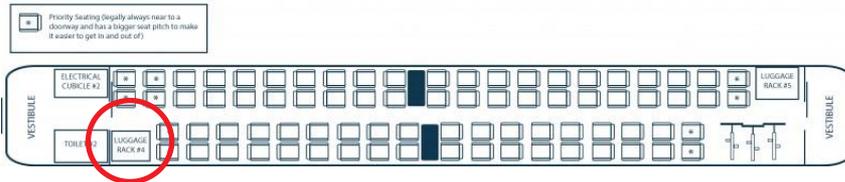
DISLIKED:

- Would encourage people to carry bags up the central aisle which will cause congestion and can mean those sitting in aisle seats get knocked by this luggage
- Would be more difficult in leaving a train if those removing luggage from mid carriage storage blocked aisles

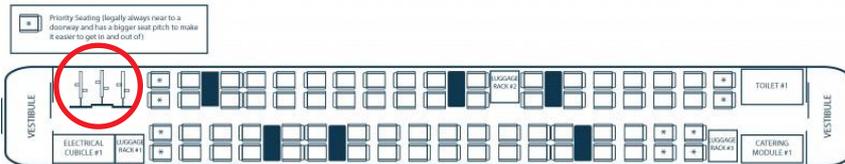
Other types of positioning

Not frequently mentioned, however, bags and bike storage next to priority seating queried in terms of safety by a couple of panelists

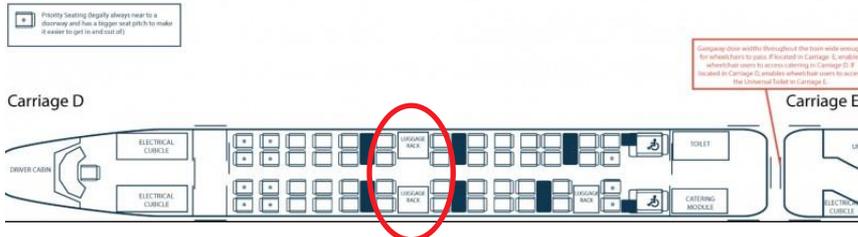
CARRIAGE TYPE B



CARRIAGE TYPE A



CARRIAGE TYPES D and E



I was travelling with someone who needed a priority space it would really worry me that the bikes right next to them weren't secure, or if the train jolted when one was being put in or removed, that it could hit them.
Commuter (31-40)

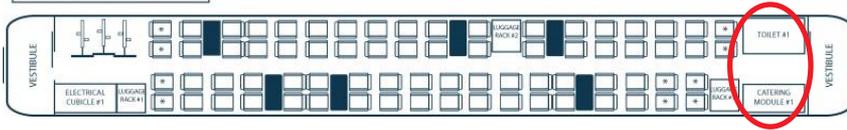
One panelist observed however, luggage racks opposite one another thought to be more likely to cause a potential for blockage

Catering

The key issue identified for the 'catering module' was the placement in designs A and D:

CARRIAGE TYPE A

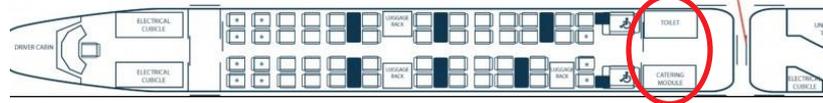
Priority Seating legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of.



CARRIAGE TYPES D and E

Priority Seating legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of.

Carriage D



Placement of toilets next to the catering facilities was mentioned by almost all panelists to be unacceptable. There were 3 key reasons:

1. Hygiene/ cleanliness/ germs
2. Smell
3. Congestion/ queuing

Other mentions around catering were:

What 'catering module' actually signified

The distribution of these modules in the train

Expressions of preference for a central single carriage facility vs. others for in carriage

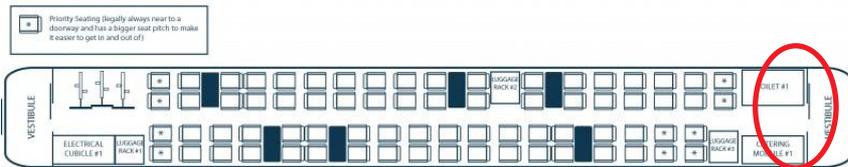
Whether catering would be deliverable

How accessible the catering would be

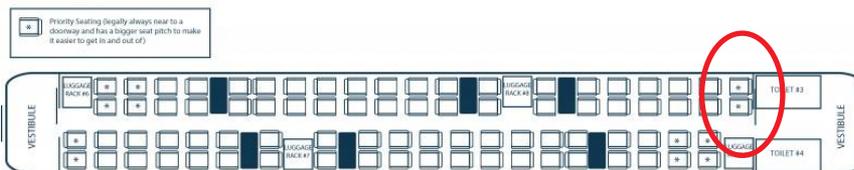
Toilets

1. As mentioned on 'catering' positioning of toilet facilities adjacent to catering was deemed to be unacceptable
2. There were also some panelists who expressed a preference for toilets to be outside of the carriage so C where the toilets appear to be outside the door were highlighted as more suitable, than for the layout in A for example.

CARRIAGE TYPE A

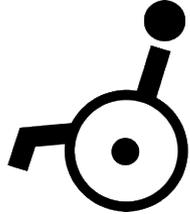


CARRIAGE TYPE C



3. Layout C was queried by some as there were 2 toilets and there were suggestions that it would be better to have them positioned at either ends of the carriage in a predictable position so that those looking for this facility could easily locate one. Some felt that one working toilet per carriage would be sufficient
4. Visibility of the toilets was an issue for some – they didn't like the idea of people seeing them go in or out – so discrete positioning of the door or a separate area (as discussed in point 2) was suggested
5. Methods for understanding whether toilets were vacant were also discussed
6. Some panelists (including those with accessibility issues) indicated they would not want to sit close to toilets and/ or that it might be useful to be able to select whether you did or not when booking a seat
7. Should be accessible/ universal

Accessibility



Designs A,B and C were found to be disappointing for one panelist who uses a wheelchair as there was **no designated wheelchair space**

- Whilst designs D and E did provide these spaces, they were criticised for a lack of available space/ turning space which would mean it would be difficult for the 'wheelie' to be able to use on board services and be able to get in and out of the space.
- There was also a request for seating to be mixed, so that those using wheelchairs who are travelling in parties do not need to be separated
- It was identified that there was not any luggage space available for those using the wheelchair spaces which could exacerbate issues with boarding assistance
- A separated direction of entrance was suggested (with doors perhaps in the middle of the carriage) which could also be extended to other groups who may be slower boarding to help passenger flow
- Layout was not thought to be sufficiently different or to offer a sufficiently different experience to that currently available

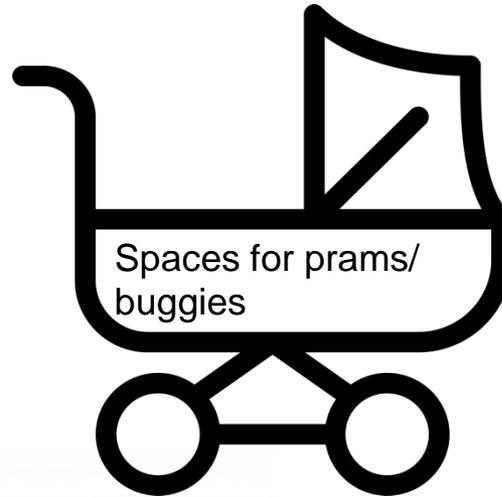
Sight impaired request to be close to exit/ doors/ toilets/ storage space, seating and floor space. Catering ideal, but not essential

In fact a wheelie "pod" with priority entrance, luggage capacity, a decent table, plenty of room and seating for carer/friends/family would be an ideal solution. If the wheelie is travelling alone, which would be apparent at time of booking, the extra seats could be used for other passengers.

Leisure (51-60)

Other reactions to designs

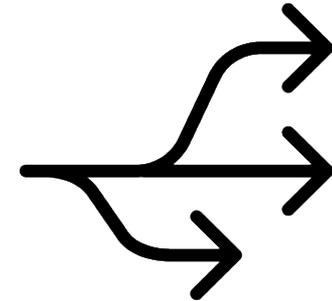
Not sufficiently 'blue sky': like a conventional train design



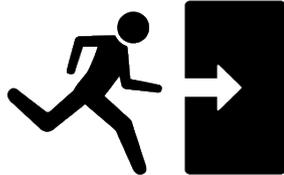
? Questions about details not on designs, eg overhead luggage storage

CARRIAGE TYPE A

Priority Seating (legally always near to a doorway and has a bigger seat pitch to make it easier to get in and out of)



Traffic flow: thinking about where areas that cause congestion are placed and using doors to divide flow if appropriate. Bikes, accessibility, luggage and boarding with children were identified as pinch points



Whether there were sufficient exit points in the event of an emergency/ whether more could be made available

Carriage layout: summary

- Some panellists expressed a sense of disappointment with the layouts, which for them, did not offer anything different to current rail carriages. There was questioning beyond the information provided on the details of the designs, and things that had been discussed previously but not included such as bookable luggage space. There were also other issues such as emergency exits, or buggy space
- However, there was some very clear messages on carriage layout:
 - Panellists did not feel comfortable having the toilets adjacent to the catering facilities
 - Layouts that do not have dedicated space/ provision for those in a wheelchair are not acceptable to those with accessibility issues
- Luggage storage is divisive in that some are very happy to see space allocated in the middle of a carriage so they can easily view it, whilst others see this is an issue in terms of meaning that luggage will be moved up the aisle and could block it when ideally it would not do so
- Seating is another area which somewhat divides opinion in the mix of bay and airline seats – personal preference and journey occasion is a factor here
- Bikes are required to be out of the way and there were some queries around whether they needed to be in carriages or could be in a separated dedicated space
- Placement of toilets outside of the carriage internal doors was generally preferable and this was also the case for bikes where it was mentioned. Accessibility to toilets is key for those that need it – and was assumed even for the design where it was not specified as universal.