RAILFUTURE ROLLING STOCK DESIGN PANEL VISIT TO THE FCC/SIEMENS CLASS 700 THAMESLINK TRAIN PRESENTATION, LONDON 28/1/14.

Two members of the Railfuture Rolling Stock Design team attended this presentation at the Excel Centre separately, one at the 2.30pm (Norman Bradbury) viewing and the other (Keith Dyall) at 6.30pm.

FIRST IMPRESSIONS: The carriage interiors seemed bright with good lighting and spacious, but then we had only seen the first class area and the standard class carriage equipped with the universal toilet. There are 3 other interior layouts that were not on display and for which we cannot therefore comment. We were impressed with the quality of workmanship that had gone into the production of this mock up which we were told had been made from plywood.

We found the seats very hard and imagine this will soon lead to complaints from passengers, particularly bearing in mind that some journeys on these trains will be up to 130 miles long such as Peterborough or Cambridge or Bedford to Gatwick & Brighton and taking over two hours. Additionally, we found the seats in both classes to be far too upright and therefore unsuitable for longer journeys and obviously designed predominantly for short distance commuter use. We were also informed that the hardness of the seats was due to fire risk mitigation but this is nevertheless unacceptable and we felt it had as much to do with minimising cost at the expense of comfort.

We noted with regret that there was a paucity of facing bay seats with airline style seating predominating. We were informed that bay seating accounted for 33% of all seats in this train but this would include those mainly in first class. The use of largely airline style seating creates an in-balance between passenger space and luggage space, necessitating use of separate luggage racks in the seating area but near to the doors. We would point out that passengers dislike being separated from their luggage and many would feel obliged to lift heavy suitcases onto overhead luggage racks in consequence, in itself a safety hazard in the event of a train accident. Furthermore, where bay seating is used, space for luggage or waste bins can be created between the seat backs with obvious benefits and Passenger Focus surveys have shown that 62% of passengers actually prefer bay seating to airline style.

Furthermore, it is more difficult to get out of airline seating as it becomes necessary for the isle seats to be vacated in order for persons to exit from the window seats and this could extend station dwell times. This problem does not exist with the standard class bay seating as seen in the new train as there were no tables as noted below.

In view of the fact that Thameslink services will serve two airports as well as the international station at St Pancras, there will be a high proportion of passengers with luggage and we therefore strongly urge that the proportion of bay seats is significantly increased and that these seats are grouped together to create luggage space between the seat backs, thus enabling some of the separate luggage racks to be removed and the space used for seating instead.

Overzealous interpretation of safety risk had also led to the seat backs being far too high causing a feeling of claustrophobia for people of less than average height in airline style seating, particularly where the seats were adjacent to a deadlight (side wall) instead of a window. The standard class seats were narrow and much too close together for comfort, making it impossible to avoid contact with anyone sitting in the adjacent seat. We felt that too much emphasis had been accorded to space for standing passengers and insufficient for the comfort of seated passengers.

Standard class seats had no seat back fold down flaps or ledges upon which to place coffee cups, computers, magazines etc, even where seats were arranged in facing bays. We would suggest ledges similar to those fitted just below the windows in the class 365 trains should be provided. Tables were

provided only in first class. Power sockets for mobile phone charging etc were located under the seats but there was nowhere upon which to rest a lap top computer in standard class..

We noted the seats were cantilevered from the side walls, leaving a clear space underneath in addition to an absence of floor mounted equipment boxes making cleaning much easier.

It was also noted that the 12 car class 700 train contained no more seats (654) than the current 8 car class 319 and the 8 car version had significantly fewer seats (416) than the equivalent class 319 or 377. Although we accept that 3+2 seating is unpopular, it will mean standing room only for many more passengers than at present, particularly since the much wider range of destinations will produce significant passenger growth.

The information displays were very good, especially those showing connecting tube lines at inner London stations.

The space and facilities for Persons of Reduced Mobility was very good but we imagine few people would choose to sit in the fold down seats in the toilet area, who would want to sit staring at a toilet wall? It would surely have been better if the seats had been fixed and turned through ninety degrees so that people sitting in this area could at least look out of the windows but still leave enough room for wheelchair access to the toilet.

The wheelchair area was thought to be satisfactory although we had serious concerns about planned 45 second station dwell times with door opening times of just 35 seconds being inadequate for wheelchair users.

We noted the bogies were of Siemens latest design with inside frames. However, they weighed in at 6.5 tonnes and appeared to be fitted with nose suspended motors, so they would not be expected to be particularly track friendly. They were set up for 100 (160kmh) operation but we understood could be up-rated to 110mph with changes to suspension settings.

The toilets, both standard and universal, appeared to be very good as would be expected in a new train.

We were surprised to see wide type inter connections between the carriages. Whilst these work well on London overground and underground services at speeds up to about 50/60mph, we wondered how the differential movement within the connection would perform at the much higher speeds to be used on Thameslink services. However, we noted the central floor section was wider on the class 700 than on the LO/LU examples.

We had some concerns about the safety of passengers standing in this interconnection area in the event of a train accident and what, if any, precautions had been taken in the design to prevent jack knifing, for example, and is this type of connection suitable for speeds over 50mph or so given these concerns? This situation would not apply to normal corridor stock as passengers would not normally congregate in that area.

It is ironic that oversize seat backs have been specified as a perceived safety feature to reduce risk of passengers being thrown around in the unlikely event of a train accident but there will be nothing more than grab handles attached to the seat backs to restrain the huge number of standing passengers at peak times. We also noted that it did not take much pressure on the seat mounted grab handles to move the seats, but this may have been a feature of the wooden constructed mock up that would not be a problem in the production train. If this is not the case, more substantial fixings for the grab handles should be considered.

We also felt that it would be essential for bicycles to be strapped in the cycle storage area for the same safety reasons and wheelchair spaces should be close to the doors as it is difficult to get wheelchairs along crowded gangways at busy times.

The door opening buttons were not easily located because we felt they were very low, even for wheelchair users. We felt these buttons should be at normal height with a lower door opening button provided for those in wheelchairs. Consideration should be given to activation of the lower button being indicated in the drivers cab so that the driver could oversee that the entry or exit of the wheelchair had been carried out satisfactorily. We also felt a yellow band around the buttons should be used as this colour is what passengers have become used to.

CONCLUSION: Overall, we felt that this train had been designed by a committee with the objective of producing a train that would be all things to all people. It was with considerable disappointment that we found in so doing, this implausible objective had not been achieved and the train would clearly be suitable for inner suburban metro type operations only. The seating was wholly unsuitable for longer distance and off peak leisure journeys which is the very sort of traffic that operators rely upon to make their operations viable and to generate the large premium payments now expected by the DfT.

It was clear that far too much space had been devoted to standing passengers with passenger comfort being severely compromised in the process and we strongly urge reconsideration of the design before series production takes place. It is a pity this mock up was not shown to the public long before production began as it is clear that two versions of the train will be needed, a high density version for inner suburban services such as Sutton Loop-Luton or Hertford Loop services and a long distance version providing a much higher standard of comfort.

Norman Bradbury & Keith Dyall

3/2/14