



South East Main Tower expansion joint . Removal and re-instatement of plates Main-span east 3. & Side-span east 3.

On Saturday of 8<sup>th</sup> October 2011, a programme of works operational procedure was carried out, the objective to carry out an inspection of the current condition of the South main tower expansion joint plates ME3. & SE3. and to carry out any associated repairs and remedial works if required before plates were reinstated back into position.

It should be recorded that no refurbishment work was required to be carried on any of the plates, only cleaning operations to remove excessive detritus from plate seats to ensure that no problems were encountered during reinstatement.

Below is recorded the actual approximate times of the sequence of events carried out on plate ME 3. & :

Access on site : Traffic management completed prior to commencement of works. Permission given to access.

05.00. : Bridge inspectors carry out and record pre removal dimensions of plate ME 3.

05.30 : Crane driver & supervisor given induction by Inspector G. Hamilton.

05.40. Engineer began removing tongue plate bolts & springs. Prior to removal engineer recorded by measurement of tensioning on springs to ensure exact tensioning restored following reinstatement of plate. In conjunction with this, the emergency failsafe system connection plates and associated fixings attached to underside of Rocker & sliding plates were removed by bridge staff to allow removal . Bridge inspectors carried out spring measurement and current condition on both Tongue & Rocker plates. .

Positioning of lifting equipment & crane usage : Crane positioned on site at approx, 06.00 to 06.15. as per drawings no – BC06 – 63-01-16. Rev 2. & BC06 – 63-01-22. Rev 2. &



06.30. Tongue plate on ME3. lifted and laid down as specified as per Drawings 63-01-18 Rev 2. and lifting attachment 63-01-17.

06.40. Rocker & shuttle plates on ME3. lifted and laid down as specified as per Drawings 63-01-19 Rev 2. and lifting attachment 63-01-17. Adjustable props (accrows) were positioned between plates ME2 to ME4. hydraulic jacks were positioned on the face of plate ME2. pressure was applied .this operation was carried out to ensure that the re-positioning of plates MW3.would be made as easy as possible.



07.00 – 07.30. approx. Bridge staff cleaned both Tongue, Rocker & shuttle plates on ME3. by pressure washing. Cleaning of the radius arm girders and associated support and under-deck steelwork also carried out.

07.45. – 09.30. Bridge Inspectors carried out visual inspection of all welds on ME3. Prior to commencement out liquid penetrant inspection procedure, assistance was required to remove excessive paint protection from the welds selected for inspection. Heat treatment was applied and all paint removed . This ensured that an accurate method of inspection could be carried out as required.

Random inspection of welds selected carried out on 4 in No locations. Also carried out during this time period was bush wall thickness dimensional checks, wear - down information of the radius arm girders and any other relevant information. (Please refer to relevant documents for findings. )

**It should be recorded that during this period consultants from Atkins accompanied by bridge managers were in attendance to observe and photograph current status of plates.**



On completion of their visit , it was agreed that plates on ME 3. could be reinstated following the addition 10 mm packer plates under the Tongue plate to remove the mis-match between tongue plate end and bitumen plate

09.45 – 10-15. Packer plates fitted and welded to East and West side on the south end of the tongue plate.



10.30. Rocker, shuttle, And Tongue plates reinstated successfully .

10.40 Bridge inspectors carry out and record post removal dimensions of plate ME 3.

### **Plate SE.3.**

It should be recorded that times related to the sequence of events carried out on plate SE 3. : are not as accurate as on plate ME3. and should not be taken as so.

Bridge inspectors carried and record pre removal dimensions of plate SE 3. in conjunction with plate ME 3 . AT 05.00.

11.00 – 11.45. Engineer began removing tongue plate bolts & springs. Prior to removal engineer recorded by measurement of tensioning on springs to ensure exact tensioning restored following reinstatement of plate. In conjunction with this, the emergency failsafe system connection plates and associated fixings attached to underside of Rocker & sliding plates were removed by bridge staff to allow removal . Bridge inspectors carried out spring measurement and current condition on both Tongue & Rocker plates.

12.00. Tongue plate on SE3. lifted and laid down as specified as per Drawings 63-01-18 Rev 2. and lifting attachment 63-01-17.

12.10. Rocker & shuttle plates on SE3. lifted and laid down as specified as per Drawings 63-01-19 Rev 2. and lifting attachment 63-01-17. Adjustable props (accrows) were positioned between plates SE2 to SE4. hydraulic jacks were positioned on the face of plate SE2. pressure was applied .this operation was carried out to ensure that the re-positioning of plates MW3.would be made as easy as possible.



12.20- 12.35. Bridge staff cleaned both Tongue, Rocker & shuttle plates on ME3. by pressure washing. Cleaning of the radius arm girders and associated support and under-deck steelwork also carried out

12.45 – 13.45. Bridge Inspectors carried out visual inspection of all welds on SE 3. Prior to commencement out liquid penetrant inspection procedure, assistance was required to remove excessive paint protection from the welds selected for inspection. Heat treatment was applied and all paint removed. This ensured that an accurate method of inspection could be carried out as required.

Random inspection of welds selected carried out on 3 in No locations. Also carried out during this time period was bush wall thickness dimensional checks, wear - down information of the radius arm girders and any other relevant information. (Please refer to relevant documents for findings.)

**It should be recorded that during this period consultants from Atkins accompanied by bridge managers were in attendance to observe and photograph current status of plates.**

On completion of their visit , it was agreed that plates on SE 3. could be reinstated .

14.00- 14.30. Rocker, shuttle, And Tongue plates reinstated successfully .



14.30- 14.40 .Bridge inspectors carry out and record Post removal dimensions of plate SE. 3.

Bridge Inspector.