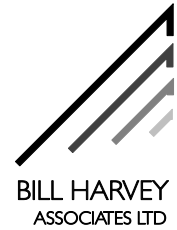




Bridge of the Month No 55, July 2015 Manton, Nr Rutland



This BoM is very late. I have been extremely busy this month, partly with trying to get a new version of Archie-M off the stocks. I have also created a [BoM Archive](#) where the pdfs can be accessed easily. Sometime soon I will create an index and add it to the top layer there.

This edition is created entirely in Word, which might create a slightly different appearance. It has also allowed me to create links to the company web sites from the logos above.



Just south of Oakham on the A6003, near Manton, is a [skew arch bridge](#) carrying a little used railway. Actually, the railway is to be upgraded to provide a freight diversion route for the East Coast Main Line. I was doing some work on Harringworth viaduct (of which more, no doubt, in a future BoM) and came across this on the way from thee to Oakham. As with any masonry bridge, it has a number of interesting features.

The first thing to note in this GA shot is the raised walkways beside the road. In fact, I think what we are looking at is the opposite, the road has been dug out to provide sensible headroom and the walls support the original foundations.

The bridge is skew by about 30 degrees, and has a relatively shallow arch. I didn't have time to measure but about 6ft rise on a square span of around 30ft.

The original face of the buttresses and the ends of the abutments are stone, but it is clear that most of the rest has always been brick. Much of the arch soffit is of poor grade (though apparently perfectly adequate) bricks, but a lot of the visible surface has been replaced with high quality blue bricks.

Notice that the stonework finishes just about at the level of the arch extrados crown and there is an obvious joint at that level. I think that everything above there has been rebuilt. I suspect that there might have been a simple stone cope on top but an opportunity was taken later to add higher spandrels and brick parapets.

As ever, neglect is taking its toll. There is a drain at each corner carrying water out through the spandrel.



They are positioned fairly low, so almost certainly the drain slopes uphill into the structure. Here we see a considerable flow of mud which has blocked the drain. There is now a tree growing.

I think we can assume that this damage is caused by the water/mud rather than anything substantial structurally wrong.



While that below, though clearly close to the water supply must also be influenced by stress.



That becomes clearer looking from the other side where there is a fracture running from the edge of the abutment to the springing intrados.



A close up view shows the poor quality of the original bricks. Anything behind the skin is likely to be less sound than this.





A look at the soffit shows that one edge has been completely rebuilt. Note that these photos are taken with a moderately wide angle lens, 24mm (equivalent, actually rather shorter in reality) on a Sony HX400V, so they distort the image slightly but show almost the whole soffit in enough detail for a close examination. Putting alongside that what can be achieved with a 14mm lens on a Canon EOS5DMk2 is perhaps worthwhile.



This shot is taken from close to the bridge centre line and shows almost the full width. Cracks are visible (some actually marked with chalk) that look as though they run parallel to the tracks and possibly directly under the rails above. It is also from the Sony, zoomed in a little, perhaps to about 35mm equivalent.



And this is really just to show how easy it is to annotate photos these days.

And finally, A closer look at one of those cracks, showing how busy it is. Mud flowing out, damage to the bricks. What can be done to upgrade this, I wonder. A matter for some thought. Perhaps we will return to it.



One last comment, though, these parallel cracks in skew bridges are something I first came across in the past year. I haven't worked out yet how they are caused or why they seem to be (at least so far) peculiar to skew bridges. Serious thinking time but any ideas to bill@obvis.com, please.