Bridge of the Month No83, November 2017
Bendy Bridge in DentDale

Short shrift this month, as well as 2 days late. Sue broke her hip on Tuesday. Mended Thursday. Likely to be home mid week but in the mean time everything seems to be revolving around hospital visits.

This delightful bridge in Dentdale is long gone. The pictures surfaced in a collection of slides I had copied recently. The arch began fairly flat and long with negligible cover. When I first saw it back in the 70s it was already distorted but still in use. I went round that way deliberately to get a fresh photo and was sad to find it had given up. Perhaps the farmer moved on from his little Fergie and the bridge couldn't deal with it.

Messages, though?

1) Masonry bridges are NOT brittle. They will bend dramatically before failure, redistributing moment in a way analogous to continuous steel or (well designed) concrete beams.
2) If you look closely, you will see a telltale at mid span, at mid depth of the ring. The damage that is taking place is a long way away from there. The question that is so rarely asked "Is it a fair test?" hasn't been asked here. Measuring something that is unlikely to change is not a very useful way forward when there is obviously major change taking place elsewhere.
3) There are upwards of a dozen very similar bridges on this stretch of river. They spring from rock to rock so they can be shallow arches with correspondingly high thrust. I didn't have time to examine it closely but there is a serious question, what is special about just this one that it should fail and others not. If I were pressed, with no other evidence, I would say that someone reversed a big lorry this far off the road, relaised things wer moving and drove off again just in time.
4) If you look at the second photo you will see that the courses in the spandrel wall/parapet sweep upwards towards the crown. So they haven't been rebuilt since the movement, or at least, the movement has increased considerably since they were rebuilt.
5) The line of projecting stones in the parapet suggests that there has been at least some rebuilding.
6) Photo 4 shows the replacement bridge with an arched steel beam deck but still stone parapets. One wonders whether it will last as well as would a rebuild with the original materials
7) Photos5&6 show an essentially similar bridge (though with a somewhat higher rise) carrying the public road further up the dale. The squince in the corner allowing the bends to be softened a little make driving noticeably easier, even in a car. It must be transformative for a truck. The main point here, though is that this bridge does carry road traffic and has no known weight limit.