

Bridge of the Month 163, May 2025



Alikianos Old Bridge

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Back in 2019, Bill wrote about the <u>then-recently-collapsed bridge over the Keritis river at</u> <u>Alikianos, in Crete</u>. I had been to visit, and taken enough photos to build a partial 3D model of the remains. This is how it looked then:



At that point, the crossing had been replaced with an "Irish Bridge" of pipes within a gravel causeway (is that term derogatory? or is it just that there are/were lots of low-water crossings in Ireland?). Apparently <u>that crossing was constructed by locals</u> under cover of darkness. This resulted in a court case, with the president of the community in the dock although there was no evidence of his involvement, because the people involved in the construction were unknown to the authorities. He was eventually acquitted. When an official temporary crossing opened slightly upriver, the causeway was removed.

Being back in the same area, we popped back for another look. In recent years, this has become <u>Old Bridge of Alikianos</u> on Google Maps, to distinguish it from the nearly complete new bridge just downriver. The temporary Bailey bridge remains in place for now.



The area around the remaining span of the old bridge has been protected by gabions. There has been talk of rebuilding the old bridge, but there is no evidence of this to date.



The collapsed remains have all been cleared up. Some of the larger stones are collected in piles either adjacent to the remaining pier, or on the old west approach road.



One trigger for revisiting was seeing a photograph in which some sort of temporary harness was visible over the pier. This appears to be solely to anchor a wire net for the purpose of stopping material dropping from the broken end, presumably a public safety measure.



Comparison of photographs of the break before (left) and after (right) shows that while the arch itself has not lost any more material, the road surfacing has broken back, and some of the inner face of the right spandrel wall has been lost.



The loss of the thrust from the next span obviously creates a concern regarding the security of the pier. The fact that it has lasted until now must serve as some reassurance, as does the lack of serious distress in the masonry.



From below, the impression is of a dip to the crown in the string course. That is confirmed from above by sighting along the parapet (from a position of relative safety off the abutment).



A joint opens slightly to the soffit one voussoir away from the keystone on the south side at the crown. I would be hard pressed to claim this was visible at the north.

The crack behind the pier is clearer, and plainly visible on both sides of the bridge.



I don't generally carry a disto or tape on my holidays (though this is not the first time that I've thought I should!) so I have no dimensions to use in Archie-M, but the shape and relative dimensions from the 3D model should be enough to get an idea. Stresses are low relative to strength in masonry bridges of this scale, at least under dead load and with reasonable assumptions regarding strength, and as long as that remains true, scale is irrelevant.

A quick juggle in Archie-M, overlaying screenshots with transparency on a square view of the elevation from the model (an orthographic view would be possible, but I'm not going to spend time preparing that over my tasty holiday lunch) gets us this – 3:1 span:rise ratio, three-centred shape.



That's very rough, but the thrust comes down to ground very much on the near side of the pier. I won't lose any sleep over that.

Is it worth rebuilding? With the new bridge next door, restoring it for its cultural value alone is quite an undertaking. Doing so with piers robust against scour would have serious sustainability implications too.

Interesting questions on a similar theme at Llanerch, with <u>reports today</u> that a planned rebuild has been scrapped because the piled foundations might harm an aquifer. Do we need all these piles? The old bridge survived long enough without them, are there not lower impact ways of protecting piers from floods?