

The science of how 83 German officers tunnelled out of a Welsh prison camp in 1945

August 9 2017, by Jamie Pringle And Peter Doyle



Plotting a route out? German prisoners in Britain during WWII. Credit: Ministry of Information Photo Division Photographie

It only takes the opening notes of the theme tune to 1963 classic film

[*The Great Escape*](#) for most people to conjure up images of the lives of prisoners of wars – and their escapes – during World War II. The film, based on the best-selling book of the same name, tells the story of how British Commonwealth prisoners escaped from Stalag Luft III in Sagan (now Żagań, Poland), in Nazi Germany.

This escape was not unique – there were an estimated 69 other mass escapes of prisoners of war during the war. In seven of these it was by German prisoners escaping. Now our new [scientific investigation](#), [published in the Journal of Conflict Archaeology](#), revealed a hidden [tunnel](#) that allowed 83 German prisoners to escape from [Camp 198](#) in Bridgend, South Wales, in March 1945.

Camp 198 had been established in 1944 in Bridgend to house 1,600 German officers. With the allies now squeezing the Germans on two fronts, the war had turned a corner, and prisoners were flooding in. In the UK alone, camps sprung up everywhere, numbered in a consecutive sequence that reached [Camp 1026](#), in order to house an estimated 400,000 prisoners. And with the [Geneva Convention](#) specifying that officers could not be put to work in the fields, or anywhere else for that matter, there were undoubtedly many escape plans made.

Yet camp security measures at Bridgend were generally poor. Perhaps overwhelmed by the huge influx of enemy personnel, protocols for anti-escape measures took some time to develop. The lack of sentry towers and perimeter lighting on the fences meant that escape attempts were extremely likely. Tunnels had already proven to be the most common means of escape in the Great War – wherever ground conditions permitted it. The clay soils at Bridgend made it harder to dig tunnels than the sandy soils underlying the Stalag Luft III camp. However the Bridgend tunnels did not need as much shoring support to keep the tunnel intact, a bit of wood salvaged from huts did the trick.

We know the prisoners actually once started a tunnel that was discovered by the guards, perhaps breeding complacency among them. Whatever the case, it did not deter the would-be escapers, and it was a second tunnel, started in "Hut 9", that finally allowed them to escape.

Scientific investigation

Left derelict when closed in 1948, Camp 198 was mostly demolished in the 1990s. However, Hut 9 was preserved by the local authorities, and remains in remarkable condition for scientists to investigate.

Hut 9 provides much evidence of the lives of the officer occupants, filling their days in captivity. Hand-drawn prisoner graffiti still adorns the prison walls. Much of it is poetry, referring to the "heimat" – home – or of loved ones. One of the graffitied walls in Hut 9 was false, constructed to hide the soil that was placed behind it and never discovered.

But what of the tunnel itself? Just as we did to locate [the missing tunnel "Dick"](#) near Hut 122 at the site of the Great Escape, Stalag Luft III, in 2003, we used geophysical investigations outside of Hut 9 at Bridgend to successfully detect the tunnel's subsurface position.

We started the investigation by using [ground-based surface scanning](#) to create a surface model of the site. This helped us [identify variations in the surface](#), such as depressions which could indicate a collapsed tunnel. We then used ground penetrating radar surveys, which uses radar pulses to image the subsurface, to find the specific tunnel location (as well as plenty of tree roots).

At this point, we still weren't ready to start digging. Measurements of electrical resistivity – how strongly a material opposes the flow of an electric current – helped us determine which parts of the tunnel were

filled. Magnetic surveys, used to locate metallic objects, turned out to be less successful, as there was little metal within the tunnel.

While the escape tunnel at Stalag Luft III was dug some ten metres below ground – requiring some prodigious archaeological effort to reach it – at Bridgend, we discovered that the tunnel was at a relatively shallow level of 1.5 metres below ground level. Careful excavations by hand eventually helped us reach this tunnel, which was found to still be remarkably intact. Sawn-off wooden bed legs and materials from the prisoners' huts, used to support the tunnel walls and roof, were still present, just as they had been left in 1945.

Following the German escape, the local police, home guard, army and air force were all mobilised. While one group of prisoners stole a car and got as far as Birmingham, none managed to successfully make their way back to Germany.

By comparison, in the "Great Escape", three people managed to return home. Of course, the Germans had to travel through the small, densely-populated island of the UK. The allied escapers achieved a much greater travel distance (470km versus 44km on average) than the Germans before being captured. They also had more sophisticated forged documents and escape material that would have significantly aided their escapes.

Given their comparatively simple plan, it is remarkable that so many Camp 198 [prisoners](#) managed to get out. And with the tunnel and the surrounding area destined to become a listed National monument and conserved for future generations, it may soon become as well remembered as the events described in *The Great Escape*.

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