



World War 1 and the Lickey Hills

4. The Quarry – Teacher's Notes

The buildings in the quarry had a **MILITARY** purpose

Why were they built here?

1. To be near to where the guns and carriages to be tested (proofed) were being manufactured and repaired – Austin Motor Company. During the First World War the Company not only produced military vehicles but also made shells and manufactured and repaired guns and carriages. See <http://www.austinmemories.com/styled-49/index.html> for more detailed information.
2. To be well away from where the general population lived.
3. Situated in a quarry as its hard rock walls provided natural protection for the explosives used on site and the one behind the Proof butts acted as an additional stop butt for the shells being fired.

Who were the people who worked in the quarry in 1917 and 1918?

The site was built by the Military and evidence suggests that a mixture of soldiers and suitably qualified civilians tested the guns. It seems likely that it was organised in the same way as the gun testing facility at Meanwood Proof Range in Leeds; this was built at the same time and by the same authority. Meanwood was run by the Military with civilian support and included a significant number of women. The Royal Garrison Artillery was involved at the Lickey Hills site but it is not known precisely who were testing the guns and maintaining the security of the compound. Again, it seems most likely that it was also the Military, supported by or supporting a civilian workforce.

Proof butts

What were the proof butts built to do?

For shells to be fired into - to test (proof) field guns and carriages, ensuring that no damage was done to people or property. They were tested to ensure they were working properly before they were sent to the battlefield.

These would have been filled with a huge amount of sand. Why do you think this was?

Sand is a good way to stop the shells – it absorbs the impact and doesn't burn. Also, the test shells used may have been retrieved and reused.

****Link to science** – practical investigation to show which material absorbs an impact the best**

What do you think these gaps were for?



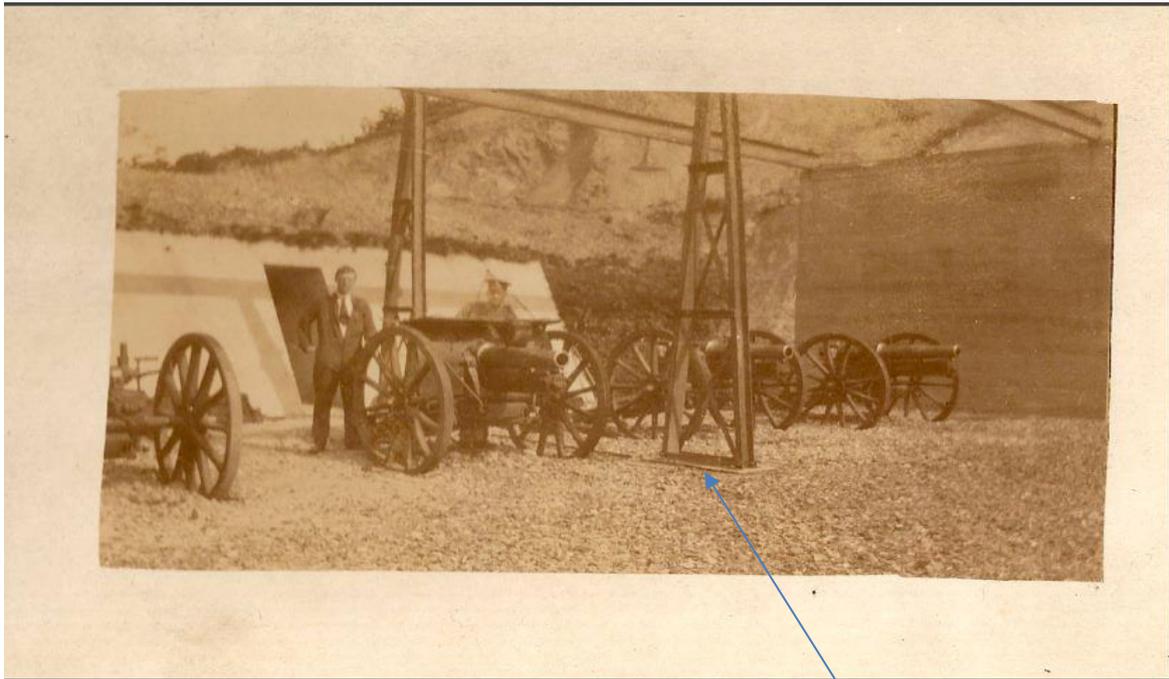
To let out the shock waves from the exploding shells.

What do you think the specially shaped ceiling in the proof butts was designed to do?



The ceiling is laminated (layered) with wood and metal. The layering and the shape of the ceiling is believed to have been to direct any ricocheted shells/fragments back into the butt to land safely in the sand.

The Gantry



The metal gantry in this photograph has now gone. Can you find the foundation stone in the middle of the quarry?

Notice the wall (now demolished) acting as support for the gantry. This ran along the side of the quarry right up to the front edge of the proof butts. It was built to protect the quarry from damage and prevent loose stones from falling, endangering workers.

What do you think the gantry was used for?

It is thought it was used to lift the heavy gun barrels onto the gun carriages ready to be tested.

Which of the men in this photograph do you think would have been responsible for firing the Howitzer field guns in this picture?

The soldier in the picture was a trained Gunner from the Royal Garrison Artillery, with experience of using these guns. He is almost certainly responsible for firing the guns. There was also probably an Army Officer in charge of the site who may also have been involved in inspecting the proved guns and carriages. The Army have experience of using guns and are an organised and disciplined body that the government could entrust such equipment and testing to. Appropriately qualified civilians might also have helped with testing or making minor adjustments to guns. The civilian in the photograph is wearing a boiler suit which indicates that he was working rather than visiting.

Civilians, including many women, were making the shells and making and repairing guns at the Austin Works which could further explain why the person in civilian clothes is in the photograph.

The Bunker



This is another photograph of the bunker. Was it taken before or after the photograph of the Bunker on the previous page? (it is behind the field guns and gantry). Can you say why?

It looks old, vegetation has grown up on its walls/roof and two slits have been cut into the walls. This was taken shortly before it was demolished in the 1980s. Notice the slits cut on either side of the entrance. These were adaptations made in later years when the site was used as a firing range for small arms, possibly for Home Guard training in the Second World War.

What was this building for? How and when was it used? The previous picture of it might give you more clues!

As its name suggests it was for those firing the guns to take refuge in while the gun was fired. When they were proofing guns (proving that they were fit for purpose) there would have been incidents of guns failing and therefore being very dangerous to those testing them. The guns would have been fired by remote detonation. This could be by the use of a lanyard to trigger firing from the safety of the bunker.

Why was it important for those firing the Field Guns?

It kept them safe if anything went wrong with the firing of the guns or if the store of munitions was set off. However, the design and location of the magazine itself should have protected them.

Magazine (Munitions Store)



Find the base of the building located in the top left-hand corner of the quarry.

What would have been kept in the magazine (munitions store)?

Shells and any other ammunition; possibly cordite and detonators (to set off the firing) used on the site.

How do you think we can be sure this was a magazine (munitions store)?

A store for explosives would have been required. This building is located in, what was at that time, a completely separate part of the quarry. It would have had quarry walls to three sides; the side to the left in the above photograph is now demolished. It follows the construction conventions of a munition store; a dog leg entrance corridor and angled walls to encourage an upward failsafe explosion. The outside shell was constructed in concrete with the inner chamber built in brick. There appears to be a separate small store at the entrance (top, middle of photograph) which would have been suitable for storing detonators.

Why was a specially constructed building needed?

A munition store needs to have safety features to reduce the possibility of explosions and minimise damage if an explosion occurs.

It would most likely have had a wooden floor to stop the possibility of a spark (caused by metal on boots striking the stone floor) igniting the stock it held.

Why was this position chosen? For safety, in a separate part of the quarry. It was tucked away from the gun testing, but near enough to the firing area to efficiently get ammunition out in small quantities..