

Lidar Data Reveals WWI Trenches

High-resolution laser scanned height models may have revealed previously unrecorded practice trenches from WWI. The Lidar data, captured by aerial mapping company Bluesky, was commissioned by the Coal Authority as part of its research and development programme, which is looking at alternative ways to inspect mine entries in remote and rural areas. However, on closer inspection by specialists at English Heritage, patterns in the terrain revealed trenches that are thought to have been used by soldiers preparing for the WWI battlefields.

Phil Broughton, project manager (Research and Development and Mine Entry Inspections), Coal Authority, said their team has inspected 103,000 mine entries in Britain since 2008 under their remit to protect the public and environment in coal mining areas. Most of the remaining mine entries to be inspected are in remote or rural locations, and the Coal Authority looking at innovative ways to carry these out using new technology.

The Coal Authority recently met English Heritage to show them the Bluesky Lidar data and they identified features believed to be First World War practice trenches. Now the data has been shared for further investigation.

Simon Crutchley, from the Remote Sensing team at English Heritage, added that the statutory advisor on the historic environment, English Heritage, was consulted by the Coal Authority on this project. Whilst conducting analysis on the mining remains he noticed what appeared to be the classic crenelated forms of First World War trenches to the east of the mining. Further examination revealed what appears to be the extensive and unrecorded remains of First World War practice trenches which could help tell the story of Derbyshire's soldiers as they prepared to go to war.

Airborne mapping

Rachel Tidmarsh, managing director of Leicestershire-based Bluesky, said Lidar is a valuable tool as it reveals subtle nuances in the landscape that simply cannot be seen from the ground or identified from other sources. This is not the first time users of the company's high-resolution Lidar have been surprised by what they can see.

The Coal Authority Lidar data was captured using Bluesky's airborne mapping system. The Lidar system uses aircraft mounted lasers to accurately determine the distance between the sensor and the ground or other targets such as buildings and vegetation. Bluesky uses an Optech Orion M300, the highest specification instrument being operated from a UK base. This allows for the capture of Lidar data at a higher point density and at a better accuracy than other systems due and includes the latest available technology in global positioning and inertial measurement for improved sensor positioning accuracy.