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RESISTIVITY SURVEY ON ROUTE OF
PROPOSED NEWCASTLE WESTERN BYPASS

A D H Bartlett

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RESISTIVITY SURVEY OF THE SITE OF HADRIAN'S WALL ON THE ROUTE OF
THE PROPOSED NEWCASTLE WESTERN BYPASS

A D H Bartlett

Summary

This survey was carried out to test for evidence of archaeological features or activity on the line of the proposed Newcastle Western Bypass where it intersects Hadrian's Wall and the Vallum. Strong disturbances were found on the line of the Vallum, but there was little response from the Wall. Other resistivity anomalies were detected between the Wall and the Vallum, but none of them appear to represent clearly identifiable archaeological features.

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RESISTIVITY SURVEY ON THE LINE OF THE PROPOSED NEWCASTLE WESTERN BYPASS

Introduction

The object of this survey was to investigate the corridor of land reserved for the Newcastle Western Bypass at its intersection with the line of Hadrian's Wall and the Vallum, and test for evidence of any detectable archaeological features. Nothing is visible of either the Wall or the Vallum at this point, although there are well-preserved sections of both nearby. The area surveyed forms a grassed open space extending southwards from the line of Hadrian's Wall which lies immediately alongside the A69 at the north end of the site. The survey was carried out on 29-30 July 1986, with the permission of the Tyne and Wear Residuary Body, who are the owners of the site.

Survey

The survey was located by means of a grid of 30m squares centred within the strip of open ground. The approximate position of the grid, which extends 210m N-S, is shown on plan 1 in relation to the proposed road works and the existing houses. Measurements to tie in the grid were taken (across the local access roads) to the front garden walls of houses to the east and west, and to the kerb of the main road at the north end of the site as shown on plan 2. This plan also shows the results of the resistivity survey which was carried out using the twin electrode probe configuration with 1m probe spacing. Readings taken at this probe spacing should penetrate to a depth of 1 - 1.5m and provide a better response to the large-scale earthworks of the Vallum than the more commonly used 0.5m spacing. Readings were recorded at 1m intervals within the gridded area.

The site was also tested for magnetic response by scanning with the magnetometer, but this simply demonstrated that the ground here, in common with many urban sites, is too severely contaminated with modern iron for archaeological features to be recognizable, and so no further magnetic work was attempted.

Results

Plot i shows the initial untreated survey data in profile. A number of clearly defined peaks or positive anomalies can be seen against a relatively undisturbed background. The positive anomalies only are also shown in the half-tone plot ii (which shows readings above the mean of the data after filtering to give a uniform background level). In this representation the ground plan of the features can be seen rather more clearly than in (i).

A surviving section of the Vallum can be seen outlined at the top centre (west) of plan 1. Some of the strongest anomalies detected in the survey at A and B (plan 2), as well as weaker ones at C fall within the alignment of the Vallum if it is extended eastwards. Unfortunately the correspondence is not exact because there are other strong anomalies nearby at D which lie outside the probable line of the earthwork. The features as detected also fail to form any very clear east-west pattern. It might well be the case therefore that the anomalies in part represent high-resistance material within the filling of the earthwork, but that other disturbances are present as well. There is for example a line of slightly raised readings which could suggest a ditch or pipe cutting across the line of the Vallum (shown dotted at E on plot i).

It is clear from the position of a section of Hadrian's Wall which survives nearby to the west that the line of the Wall must fall within a few metres of the north end of the survey. There is only a very weak anomaly here in the plot (F), from which nothing can be interpreted with confidence except perhaps that it is unlikely that substantial masonry survives close to the surface.

Of the remaining anomalies detected between the Wall and the Vallum some are likely to be modern. The substantial feature at G lies parallel to the existing path, and there is a line of low readings (dotted at H) which might indicate compaction of the soil along another unpaved path. Several other anomalies are visible (eg I,J,K,L,M), but they are too isolated or indistinct for their significance to be clear. Positive anomalies such as these could indicate a variety of features such as pits, paving or masonry, but none here show any regularity of plan which would allow them to be interpreted for example as structures or as a road. The possibility that some of them might be archaeologically significant cannot be excluded, but in such an urban setting trial excavation might be needed to establish this.

Conclusions

The survey has shown that the site is likely to have suffered disturbances from a variety of non-archaeological sources, but some response to archaeological features might also have been observed. Strong anomalies were detected corresponding in part to the position of the Vallum, but no very clear plan of the earthwork could be obtained. The masonry of Hadrian's Wall appears to have been robbed, but some might survive at depth. The significance of other features found will remain unclear without further investigation, but several are likely to be modern.

Surveyed by: A D H Bartlett

with: A Boucher

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Plans enclosed

1. Location of survey grid in relation to proposed new road (based on DOT plan of road scheme)
2. Resistivity plots