

SITE SUMMARY SHEET

93/103 Ribchester

NGR: SD 6535

Location

The town of Ribchester lies on the river Ribble, some 5km NNW of Blackburn, Lancashire. Geophysical survey was carried out in several fields adjacent to St. Wilfred's Church, on the southern edge of the town, close to the river.

Archaeology[#]

Ribchester is the site of the Roman fort of *Bremetannacum* founded in the latter half of the 1st century AD. Excavation has revealed several phases of military activity at the site, in addition to a civilian extra mural settlement. One of the survey blocks lies within a scheduled area (Scheduled Ancient Monument Lancs 55).

Aim of Survey

The geophysical work was carried out as part of a **Time Team** programme commissioned by **Channel 4**. The aim of the survey was threefold: *a*) to investigate the continuity of features identified by excavation in the present graveyard (see Figure 1); *b*) to locate the ditches associated with the extramural settlement, and *c*) to identify any other anomalies of archaeological interest.

Summary of Results*

The resistance survey has identified several ditch features that can be related to the extramural settlement and a broad high resistance anomaly that is thought to be part of the Roman road. No ditch type anomalies were identified that could be associated with the early, wooden phase of the fort. The gradiometer data are generally noisy and any archaeological interpretation for anomalies that have been highlighted remains tentative.

*** It is essential that this summary is read in conjunction with the detailed results of the survey.**

[#] Information taken from: K Buxton & C Howard-Davis: *Ribchester Excavations 1980, 1989-90. "Brigantia to Britannia" Fort, Fabrica and Civilian Settlement*. Lancaster University Archaeological Unit.

SURVEY RESULTS

93/103 Ribchester

1. Survey Areas (Figure 1)

1.1 Five areas (A-E) were surveyed by gradiometry and resistance. The areas were placed, in consultation with **Time Team** staff, to answer specific questions about the site. The locations of the survey grids are given in Figure 1 at a scale of 1:2500. This diagram also schematically highlights some of the features identified by excavation.

1.2 The survey blocks were laid out by **Geophysical Surveys of Bradford** and tied in by staff from **Lancaster University Archaeological Unit (LUAU)**.

2. Display

2.1 The results are displayed in three formats:- X-Y trace, dot density plot and greyscale image. These display formats are discussed in the *Technical Information* section, at the end of the text.

2.2 Simplified interpretations of the resistance (Figure 2) and gradiometer data (Figure 3) are produced at 1:2500. The archive section contains data plots and interpretation diagrams for each area (Figures A1-E2) at a scale of 1:500.

2.3 Letters in parenthesis in the text below refer to labels on the archive interpretation diagrams.

3. General Considerations - Complicating factors

3.1 Ground conditions at the site varied. Most areas were relatively flat and under short grass/pasture (Area A was in a playing field), but there were concentrations of high weeds and nettles in Areas C and D. While these did not hamper the resistance survey, they made walking with the gradiometer (and hence collection of the magnetic data) difficult.

3.2 The presence of a road, wire perimeter fences, houses and scattered ferrous debris has contributed significantly to the noise levels of the magnetic data. In places, the disturbance is such that it will have masked any archaeological anomalies, if present. In general, it has hindered the full archaeological interpretation of the gradiometer results.

4. Results

4.1 Area A (Figures A1-A3)

This survey block lies within the scheduled area (SAM Lancs 55). It was positioned to investigate the possible continuity of ditches associated with the timber fort, which were identified by excavation in the churchyard immediately to the southwest (see Figure 1). The ground is currently used as a football pitch.

4.1.1 The resistance survey has clearly identified the markings of the football pitch, which appear as distinct low resistance anomalies. It is thought that repeated liming has created localised variations in the

chemical composition of the soil, resulting in the anomalies noted here. The production of resistance anomalies by superficial liming is a rarely noted phenomenon.

4.1.2 The prevalence of the anomalies noted above has made it difficult to identify and interpret potential archaeological responses, particularly low resistance anomalies. No responses that might be associated with ditches have been located. Filtering the data, however, has revealed a broad band of high resistance which appears to turn through 90 degrees at the southwestern edge of the survey grid. This anomaly may represent part of the road running from Ribchester to Kirkham which is discussed in the excavation report produced by LUAU.

4.1.3 The gradiometer data for Area A are noisy; the presence of a grass-roller and perimeter walls has contributed to this disturbance.

4.1.4 Several anomalies of possible archaeological significance have been highlighted on the interpretation (Figure A4). The responses vary in strength; some might represent pits, while others seem more characteristic of strongly enhanced (?possibly burnt/fired) material. There seems to be little correlation between the magnetic anomalies and those detected in the resistance survey (4.1.2 above). Given this, and the general noise levels of the data, natural or modern interpretations for these anomalies cannot be ruled out.

4.2 Area B (Figures B1-B4)

This area, approximately 100m west of Area A, was surveyed in an attempt to locate the ditch surrounding the extra mural settlement at Roman Ribchester. Evidence for this ditch had been found during construction of the adjacent residential estate.

4.2.1 A linear low resistance anomaly running roughly through the centre of the survey area is interpreted as the ditch. It appears to diverge at point (A), with an arm curving to the south (B), while hints of a weaker response continue on the same line (C).

4.2.2 Inside this ditch (*i.e.* to the southeast) a broad area of high resistance is visible. It is roughly sub-rectangular in shape and may represent building rubble; however this response could equally reflect natural variations in ground moisture content.

4.2.3 The background resistance values drop sharply along the northwestern edge of the survey block and this may be attributed to localised waterlogging.

4.2.4 The northwestern half of the gradiometer survey is dominated by parallel linear trends attributed to agricultural activity. They apparently respect a rectilinear negative anomaly (D) which could represent a former field division. A ferrous-type response was detected at the corner of the negative anomaly. Its position could be entirely fortuitous; however, such ferrous responses are often associated with dismantled field boundaries and this would support the interpretation of anomaly (D).

4.2.5 The magnetic response labelled (E) on the interpretation (Figure B4) apparently corresponds to anomaly (C) detected by the resistance and could, therefore, represent the ditch. Two points should be noted, however, which might suggest an alternative interpretation: *firstly*, the anomaly form is similar to feature (D) *i.e.* a strong negative coupled with a weak positive response, and *secondly*, it respects anomaly (D). Given this, it is possible that the two anomalies are related, both reflecting a former field system.

4.2.6 Isolated ferrous peaks, the product of presumed modern ferrous debris in the topsoil, are visible in the data and noted on the interpretation.

4.3 Area C (Figures C1-C4)

Area C lies 20m SW of Area B and was positioned to investigate the continuity of the ditch anomaly (C) detected by resistance.

4.3.1 The resistance survey has clearly located the continuation of the ditch (C) noted in 4.2.1 above. It curves gently to the southwest and appears to line up with an earthwork (Figure 2).

4.3.2 There is no indication of the ditch in the gradiometer data. A few anomalies of possible archaeological significance are noted, but this interpretation is tentative. A strong anomaly in the southern corner of the survey grid could be archaeological but it seems to have a negative response associated with it. It thus seems more likely that it results from ferrous debris just outside the survey area.

4.3.3 Parallel linear trends in the data are thought to have an agricultural origin. Elsewhere, stray "iron-spikes" are noted.

4.4 Area D (Figures D1-D2)

This small strip was surveyed to determine whether the ditch (B) continues.

4.4.1 A faint low resistance anomaly can be seen in the resistance data set, on the same alignment as anomaly (B). However, it is poorly defined and this may cast some doubt on an archaeological interpretation.

4.4.2 The gradiometer data are noisy; the product of a wire perimeter fence and presumed modern ferrous debris in the topsoil. A few archaeological type anomalies are tentatively highlighted, though these could equally be caused by more deeply buried ferrous material.

4.5 Area E (Figures E1-E4)

Given the ephemeral nature of the low resistance anomaly in Area D (4.4.1 above), survey was extended to the field south of the road in an attempt to clarify interpretation of this anomaly.

4.5.1 A road crosses the survey area aligned roughly north-south and this is marked on the interpretation.

4.5.2 A faint, linear low resistance anomaly, aligned with those in Areas B and D (sections 4.2.1 and 4.4.1 above) would seem to confirm the continuation of the ditch.

4.5.3 High resistance anomalies in the northeastern and southeastern corners of the grid are thought to reflect natural variations in ground moisture.

4.5.4 A broad band of disturbance in the magnetic data is associated with the road. This will have obscured any archaeological anomalies, if present. Similarly, ferrous noise along the northern edge of the survey area is attributed to a perimeter wall and fence.

4.5.5 Several weak linear anomalies are tentatively highlighted as archaeological, though none of these apparently bear any relation to the resistance anomaly referred to in 4.5.2 above. A group of stronger responses at (F) might have an archaeological origin, but they could equally reflect additional disturbance associated with the road.

4.5.6 Stray "iron-spikes", visible in the data and noted on the interpretation, are attributed to modern ferrous debris in the topsoil.

5. Conclusions

5.1 The resistance survey has succeeded in locating a number of anomalies of archaeological significance. The ditches of the timber fort have not been detected in Area A, however there is evidence of the road running through the main fort. The low resistance anomalies noted in Areas B-D are thought to represent the ditch of the extramural settlement. There appear to be two possible curving arms of this ditch and this might suggest *either* different phases *or* some internal division. Excavation trenches placed over the two arms of the ditch (anomalies (B) and (C)) in Area B revealed them to be different, with feature (B) being considerably less substantial; this could arguably support the latter interpretation.

5.2 Most of the gradiometer data sets are characterised by high noise levels - the exception is Area C - resulting in part from surface obstructions *e.g.* a road, wire perimeter fences, garden machinery. This disturbance has hindered the full archaeological interpretation of the results. One weak anomaly in Area B could represent part of the extra mural ditch, but elsewhere the archaeological type anomalies identified in the magnetic data bear little or no correlation to the resistance interpretation.

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Geophysical Surveys of Bradford

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