Report on Resistivity Survey at Fairlop Plain, Fairlop. London Borough of Redbridge.

IG - HR 93.
LDPEM/ACIG/098.
TQ 462 899.

M. Beasley.
09.06.1994.

Site Director: Dr. F.M. Meddens.

Site Supervisor: M.D. Turner.

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Introduction.

A resistivity survey was conducted by members of the Newham Museum Service Archaeology and Local History Section between 28.03.1994 and 28.04.1994, at Fairlop Quarry, Fairlop, London Borough of Redbridge. The survey was conducted as part of continuing archaeological assessment work by Newham Museum Service of the site, scheduled for gravel extraction by Redlands Aggregates Limited. The site was funded by English Heritage, negotiated and directed by Dr. F.M. Meddens for the Museum and supervised by Mark Turner for the Museum. The survey was supervised by the author.

The survey area (*Fig. 1.*) was an area of rough grassland measuring c. 10.5 ha., with known crop marks visible from aerial photographs. The survey budget allowed a maximum of five days field work, so a sample area was decided upon, covering two known cropmark areas, existing excavation trenches, and the area between to provide a survey of the area with the greatest possible concentration of the archaeological deposits.

The survey area appeared dry and well drained, although standing water was observed in several areas where groundworks had removed topsoil. Inspection of these groundworks revealed c. 0.5m. of sandy silt topsoil and subsoil, overlying sandy gravel natural deposits.

The area was covered in rough vegetation with no trees or bushes. The depth of vegetation, in places over a metre high, was considered a problem, so the survey area was flattened by machine before survey. This was not judged to have affected the ground surface of the survey area sufficiently to prejudice the survey.

However, there was substantial rutting evident from heavier plant over the area, although these generally did not extend deeper than the top surface. In addition, a large spoil heap to the north was thought to have partially covered one of the crop marks, and this was associated with a temporary road graded through the topsoil onto the top of the gravel. The survey area also included previous archaeological evaluation trenches and the spoil heaps associated with these. There were no services apparent over the site.

The Survey.

The survey was conducted using a Geoscan RM15 Basic resistance meter, with 0.5m. separation twin probe array. The machine was set to a current of 1 mA, with x10 gain. Samples were taken on 20m. x 20m. grids, at 1m. sample and traverse intervals, on a zig-zag traverse. Results were processed using Geoplot v1.2 and 2.0 software.

A localised survey base-line was established north to south over the survey area, and grids surveyed from this base-line. This was then tied into the site grid and onto a 1:2000 scale survey plan. A total of twenty-nine full and partial grids were surveyed, oriented north. Obstructions and incomplete grids were dummy logged, and grid information was recorded on Museum pro-forma sheets, these sheets forming part of the site archive.

Processed Results.

The processed results show positive low resistance readings over the entire survey area (*Fig. 2*)_. These appear to be of both natural and archaeological origins. The two largest and most obvious features both appear to be of natural derivation. The first appears as a band of low resistance readings, c. 30m. wide running north-west to south-east through grids 1, 2, 3, 6,and 7. It is though to be a buried river course. A second natural feature runs on a similar orientation to the north-east through grids 18, 22, 23, 25. This appears to show tributaries t either side, and is thought to be a stream bed.

However, there are several large low resistance readings apparent on the plot. The clearest of these appear to form two arms of a possible rectilinear structure t the north-west of the plot; the first running north-west to south-east through grid 5, the second south-west to north-east through grids 9 and 14. These features appear to be ditches c. 5m.- 6m. across. It is thought that this may be the corner of an enclosure crop mark shown on the aerial photographs of the site. Unfortunately, the area to the north is obscured by a large modern spoil heap.

To the east of the eastern arm of this enclosure, a further linear low resistance feature can be seen running roughly north to south through grids 16 and 17, and to the south east a fourth feature runs through grids 20 and 21. These two are of roughly the same width as the possible enclosure ditches, and may form two arms of a further enclosure or a field boundary.

A further possible ditch alignment is apparent running east to west in grid 26, although rutting from heavy plant had disrupted the ground surface in this grid and to the south in grid 29.

The evidence for occupational deposits is sketchy, being limited to a faint circular structure in grid 4. Although faint, this may represent a ring ditch c. 15m. in

diameter. Smaller settlement features are unlikely to appear individually on a 1m. sample and traverse interval.

To the south of this, running through grids 3, 6, 7, 8, and 11, is a linear arrangement of four circular high and low resistance features. These show as central low resistance readings c. 5m. in diameter with an outer ring a further 5m. wide of higher resistance readings. The interpretation of these is unclear. They may represent a former tree line across the site, the features representing tree boles, but may also represent a line of bomb craters, heading as they do towards the airfield to the north.

The high resistance readings to the centre and east of the plot are probably a rise in the natural gravel. In places these areas were of too high resistance for the current to penetrate; these areas being represented by dummy logging. It is thought that this phenomenon may be caused by iron panning, large areas of which were reported from the evaluation trenches.

Dummy logs in the south-west corner of grid 1 shows the position of evaluation trenches and spoil heaps.

Interpretation and Conclusions.

The processed plot shows several large ditches on various alignments. Comparison with the aerial photographs of the site indicates that the two most north-easterly of these form two arms of the enclosure crop mark. Although the match is not identical this can be explained by transpositional error in transferring the oblique photograph to plan. The two ditches to the east may represent a boundary ditch with entrance, although this is by no means certain. Small scale excavation (machine trenching) would further clarify the exact nature of these deposits.

No evidence was obtained on the nature of any possible settlement activity; the only indications being that of a possible ring ditch. However, as previously stated specific definition of smaller settlement features is unlikely with a 1m. survey, especially with high resistance disturbance from the natural in the centre of the plot and to the east.

In addition, the survey appears to have revealed a buried landscape, with probable streams or rivers apparent. In addition a possible field boundary may be present, represented by a line of tree holes, although the size of these features would suggest that bombing during the 1939-1945 war is a more likely interpretation. It is possible that archives exist to confirm or deny this bomb damage theory.

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