FIELDWALKING WITH A COMPASS

by John Bateman

Introduction

Fieldwalking may be carried out in a variety of ways. Not all are appropriate to every case. In this article I want to explain why the compass method may be particularly appropriate to low-yield lithics surveys. First, an outline of some fieldwalking methods and their problems.

Random walking is hardly a serious survey technique and should not be used, except to assess a particular field for further and more appropriate survey.

A methodical walking regime based on cultivation rows is probably as good as any technique for finding artefacts, but serious problems lie in recording them. In this method finds are usually recorded by cultivation row or by crude blocks, such as 'the south-west corner', or 'along the southern edge', etc. Again, this is not a method to be recommended for survey work, but it would be suitable for rescue situations where time was limited.

The last method can be greatly improved upon by adopting one of the line-walking techniques. These methods have been described in detail by several field workers, including Fasham et al. (1980), Shennan (1985) and Brown (1987). Without going into great detail here, the basic principles centre on fieldwalking in parallel lines, usually carried out by a small group of people. The distances between the individual walkers being decided by the expertise of those taking part and by pre-determined methodological schemes, economic restraints and survey aims.

The survey grid is one of the most widely-used methods of recording finds from fieldwalking. After first assessing the field to be walked, perhaps by one of the methods mentioned above, the field is laid out with a grid of poles. These may be put in by tape triangulation, by optical square, or by other such devices. The squares may measure 30 x 30 m, or any appropriate size, the smaller the grid square the greater the accuracy. Finds are recorded by grid square, each square having a unique letter or number. One of the problems encountered was the amount of trampling the survey team can do, especially if the field is on the wet side. I also found the method rather slow and probably mainly appropriate to detailed and specific surveys (for example Fasham et al. 1980, 17-19). It is also very appropriate to sites producing large amounts of finds.

My first use of the M73 military style prismatic compass was through fieldwork on the North York Moors, on the Glaisdale and Bilsdale Moors. When I turned to fieldwalking in the Howardian Hills many logistical problems had to be overcome, most of which were solved or greatly reduced by use of the field compass. I doubt if sufficient progress could be maintained if one had to rely on the accurate, but slow, grid-square method. Whilst parallel line walking is undoubtedly faster and more flexible than the grid-square, it lacks precision in recording. An outline of the present survey may help to illustrate the need for a different approach.

The Howardian Hills Lithics Survey

The Lithics Survey was begun in 1988 and is concentrated on a area of the Howardian Hills, a low range of hills separating the Vales of Pickering and York, running west from Malton. The most prominent archaeological features being numerous Bronze Age barrows, together with linear earthworks and crop-marks.

The survey area is a transect rectangle measuring 5 x 4 km.

The fields to be walked range across six farms within the transect area.

Fieldwalking time is limited each year and to a five year survey period.

Past Howardian Hills finds have not been overwhelming in their numbers, so there is little reason to expect vast numbers of lithic artefacts during the present survey. Field collection, walking and recording methods are therefore aimed at flint scatter and occasional 'moderate' concentration levels. Very large numbers of lithic and other finds could be dealt with, but not necessarily by the compass method of recording.

The number of fieldwalkers is limited to two.

The following parameters led to the use of the field compass as the method best-suited to the survey.

In the field it is quick to use once the field stations are established.

The walking survey is straightforward with the minimum of trampling.

Accuracy is as good, if not better, than with the field grid method, depending on the grid size, and most finds can be plotted to within a few metres of their locations.

It is an ideal method for surveys where the yield of finds is low.

Limitations of the method are mainly centred on surveys with large numbers of finds, where the field grid would come into its
own. It also takes a considerable time to plot finds, but as this takes place in the office it does not alter the effectiveness of the compass method in the field. The Lithics Survey is just that; other finds have to be treated with less consideration for detail in the field in order to maintain the five-year plan. It would be a waste of time, for instance, to plot every sherd of willow pattern or beer bottle, these items are bagged selectively by field, for later analysis of general find distributions.

The Compass Method Outlined

Figure 1 shows a simple rectangular field of about 5 ha. The first step is to set up a series of stations onto which to sight back from any position in the field. Usually a base-line of ranging poles is set up at 100m intervals, or whatever distance is preferred. The field in question had a convenient series of power line poles set in a straight hedge running down to the farmhouse; these were used in this case together with supplementary ranging poles and trees. A sketch in the field note-book showing stations and distances between them and ground location points is all that is necessary, in order to be able to establish a plan of the field stations later. However, experience has shown that it is better to record the stations on a scaled plan of the field. By doing so it is possible to deal with less obvious problems on the day of the survey, instead of waiting until later to plot out the field. Thus boundaries that have been moved or removed can be seen more readily. A scale of 1:10,000 is adequate for this initial plotting of stations and field boundaries.

All worked stone and flint is plotted using three stations to which to sight back, but four would be ideal. Care has to be taken to avoid straight siting lines between stations. The individual finds are recorded by number in the field book, alongside their three bearings.

Pre-conquest pottery and finds are recorded in a similar way. Medieval sherds are not individually plotted, unless groupings are apparent. Other 'individual' finds, such as coins and unusual items, may be plotted by compass.

Walking is always along cultivation lines, where these can be seen, and the headlands either taken in at the same time or separately. Plotting of finds usually takes place on return to base; generally at a scale of 1:1250. First the outline of the field is drawn, usually from Ordnance Survey maps; then the stations are plotted and cross-checked for accuracy. A magnetic north alignment line is then plotted; and plotting of the individual finds can now begin. Given the choice I would use a computer for most of this data plotting, but my only aid is a square navigational protractor which I find adequate but slow. Plots that do not triangulate 'spot-on' occur from time to time. These are generally rectified by initial compass reading errors. Obvious ones can be avoided by not carrying a pocketful of metal objects such as tape measures, pen-knives, etc. I also avoid

1. Worked flint plotted by compass bearings. Howardian Hills Lithics Survey 1988. Standing too close to wire fences and buildings clad with metal. Wooden ranging poles are used in preference to metal ones. Compass readings are repeated so that the person booking them is not mistaken, for example: '35 deg. to [station] 2'. Three-five degrees to [station] 2'. Initial reading errors can rarely be rectified at a later date, unlike plotting errors.
So far twelve fields have been walked, totalling approximately 60 ha. The worked flint totals 550 pieces and of these the majority are debitage or waste. Eighty-seven are scrapers of various sorts, twenty-six are cores, up to fifteen are point/arrowhead forms, and fifty-five are blades. The finds are not limited to any particular period, ranging from small Mesolithic blades to a large Neolithic point, arrowheads and Bronze Age scrapers.

On the whole the compass plotting method has proved very effective for this particular survey. The initial setting out of stations may seem long-winded, but in practice probably takes little more than half an hour. As with other types of survey, complications can be dealt with by plotting key points using a theodolite should it be necessary. In fieldwalking where flint finds are going to be scarce and the transect area quite large, and where time and walkers are limited, the field compass really does offer a speedy and accurate alternative to more usual survey methods.

REFERENCES

Brown, A., 1987, Fieldwork for Archaeologists and Local Historians (London, Batsford)


Shennan, S.J., 1985, Experiments in the Collection and Analysis of Archaeological Survey Data at the East Hampshire Survey (Sheffield, Department of Archaeology and Prehistory)

THE FENLAND PROJECT

A meeting held in Cambridge on 2 September 1989, generously hosted by David Hall of the Fenland Project, offered the opportunity to handle some of the abundant harvest of artefacts collected during the project and to hear accounts of their analysis.

Use-wear Analysis of Surface Material - Can it Really Be Done?

by Andy Brown

General Considerations

Surface lithic material is an enormous archaeological resource, yet the level of information which has so far been derived from it is limited. My study of the surface material collected during the first stage of the Fenland Project from the parish of Isleham, Cambridgeshire, was designed to explore whether a greater quantity of information could be retrieved from surface sites. But why try use-wear analysis? Surely the damage which flint must incur in being brought to the surface by agricultural machinery alters damage patterns so much as to make use-wear analysis futile?

The answer to this rhetorical question is that use-damage does survive ploughing in many circumstances, although it is necessary to adapt the questions asked of the data and the methodology applied. Use-wear analysis is analogous to any other line of enquiry on surface material: the task is firstly to recognize the inherent limitations of the technique to be applied and secondly to establish the nature of the post-depositional transformations and to allow for them in the formulation of appropriate questions.

Taking these two considerations in reverse order, the obvious source of post-depositional damage on surface material is the action of agricultural machinery. A comparison of the damage patterns of ploughed and unploughed lithic material by the author, however, showed that plough damage was localized when intensive and sporadic otherwise. Some pieces of a surface collection had experienced little or no plough damage, while others had almost all of their edges modified and were best excluded from the analysis. In the sporadic cases, plough damage was isolated and was characterized by large, step-terminated scarring. This is a rare scar type on experimentally-used flints and on such pieces is invariably associated with other evidence of use on hard materials such that it is difficult to mistake plough damage for use-damage: it is patterns along a length of edge which are used to interpret use-damage evidence at low power.

This leads straight on to the limitations of the technique to be applied. A series of experiments led me to conclude that even under ideal conditions a range of activities were likely to remain invisible to low-power use-wear analysts. Figure 1A